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BOOK

215

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Webbed Arm Chair

Dual-Purpose
Coffee Table



Dinnerware Breakfront



Matching Living Room Units



Plywood Coffee Table

Linen Cabinet
Storage Shelf



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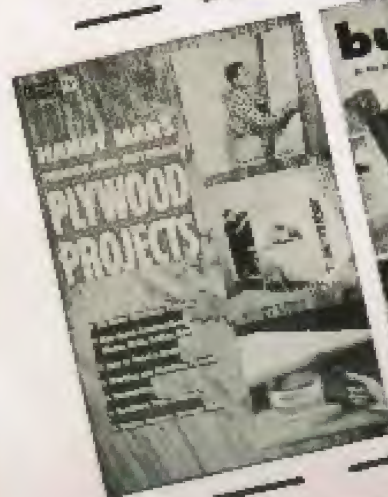


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(See inside front cover)

AT YOUR FAVORITE NEWSSTAND • 75¢

build your own modern furniture

by Klaus Grabe

A FAWCETT BOOK

NUMBER 215

LARRY EISINGER • EDITOR-IN-CHIEF • FAWCETT BOOKS

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MANAGING EDITOR

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Grateful acknowledgment is made to Patterson Brothers Tool Shop for the generous loan of hand tools to illustrate the first chapter, and to Minnesota Mining and Mfg. Company for their cooperation during the preparation of the finishing chapter. Assembly photos by Simon Nathan. All diagrams, excepting those accompanying Projects 4, 9, 12, and 13, by Henry Clark.

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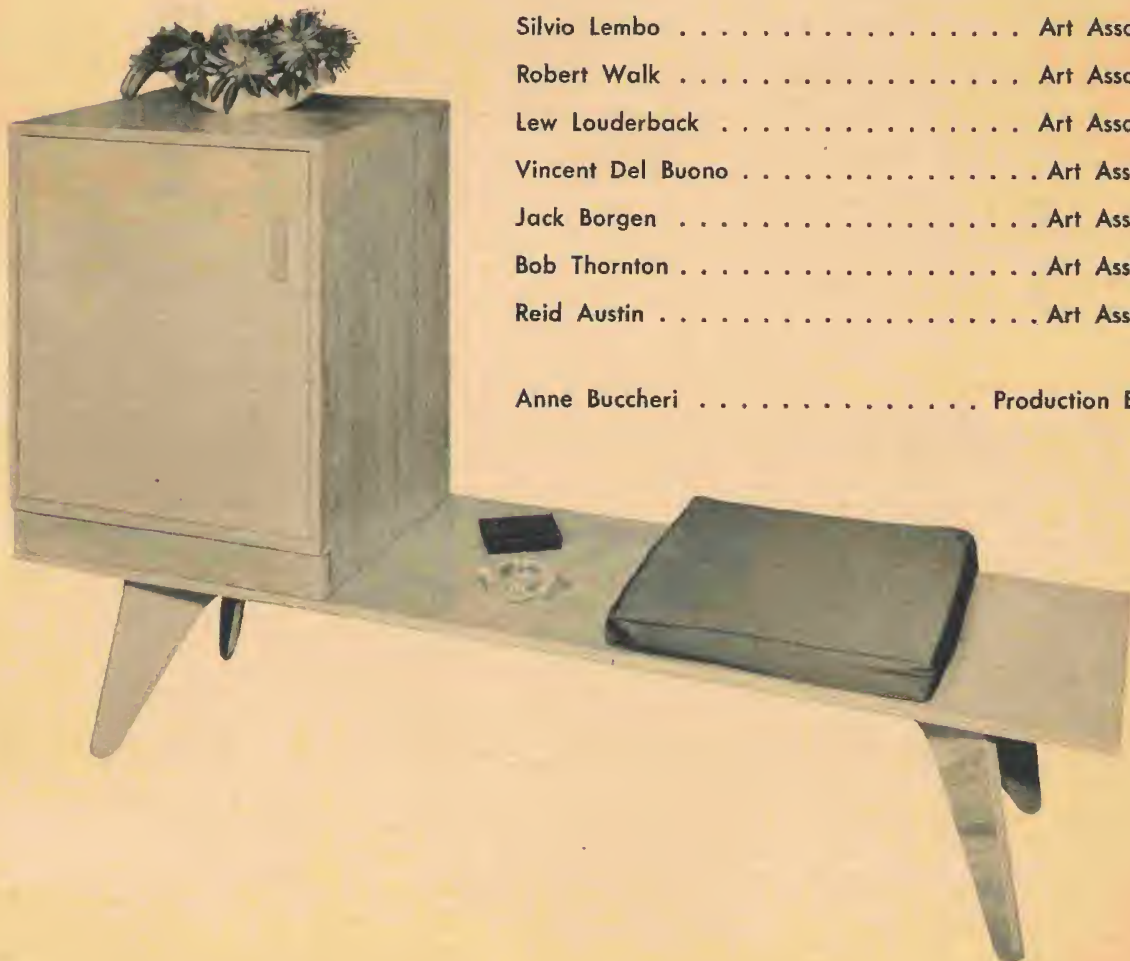
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INTRODUCTION

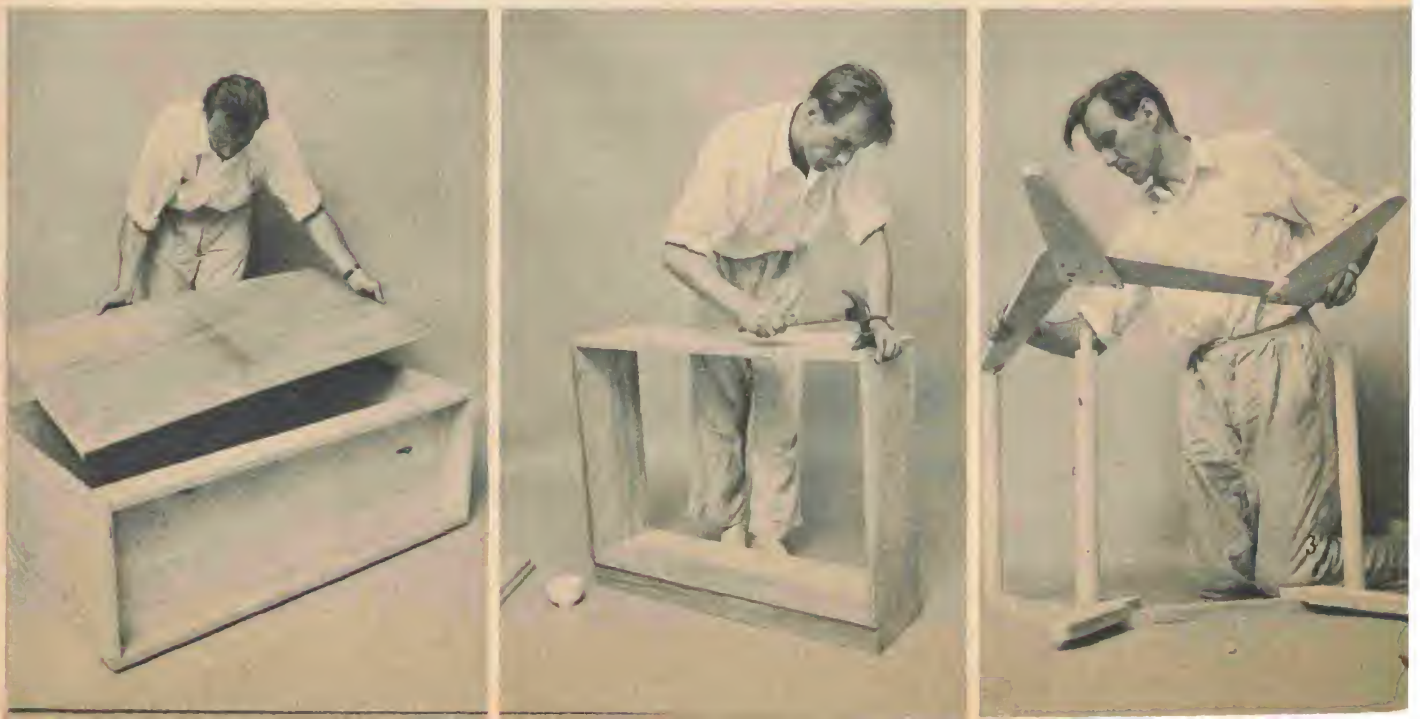
Every piece of furniture in this book was designed with two basic questions in mind. First, will this unit be attractive enough to fit into today's style-conscious home? Secondly, have the construction procedures and assemblies been simplified as much as possible without sacrificing the functional or visual aspect of the piece? These units, therefore, combine ease of construction, extreme utility, and a handsome appearance.

But before actually building any of them, it is suggested that you read the chapter entitled *Materials, Layout and Cutting*, which treats various factors that apply in general to all of the subsequent projects.

Each project is presented with a complete descriptive text, photographs and sketches showing parts and assembly, and a bill of materials. For some projects, chairs for example, it was not feasible to give exact dimensions of legs or sides in the bill of materials; after you cut your cardboard templates, you can experiment to see how to make the most economical use of your plywood. The outside dimensions, therefore, are of little value in determining exactly how much plywood you'll need. Thus, if some members in the bills of materials are marked "cut as shown," this means that with some judicious planning you will be able to back up various elements, to use one common cut for two edges, and so on.

You'll also notice that the cabinets, chests, and bookcases are planned in multiples of two-foot lengths, which means that endless modular arrangements may be made. These are treated in the last chapter of the book.

—Klaus Grabe





Photos, unless otherwise credited, by Hal Kelly

An easily made jig used with a band saw facilitates cutting top disk for Project 2 (Round Coffee Table).

materials, layout and cutting

Before swinging that saw, you'd better read these tips that apply in general to all of the projects that follow. Objective: custom furniture.

SIMPLICITY is the double-barreled word for every project in this volume—simplicity of line and simplicity of construction. If you've ever hung a picture or sawn a board, you're eligible. Plywood is the material used primarily, although in some projects (Adjustable Bookcases, for example) stock lumber can be used to advantage. Three-quarter-inch plywood is obtainable in several good-looking veneer facings, like birch, oak, mahogany, or gum. It would be rather pointless to use fir for any of these pieces, unless you plan to paint them. However, if you desire natural-finished furniture, you would be wise to get one of the veneers mentioned. Remember that the same amount of work is involved regardless of the material you use, and while you're expending some time and effort, you might as well work for units that will take rich natural finishes. You will find that although hardwood-faced plywoods are costlier than fir, the end results are well worth the difference in price.

Some craftsmen object to exposed plywood edges. This problem may be somewhat overcome by using lumber-core plywood,

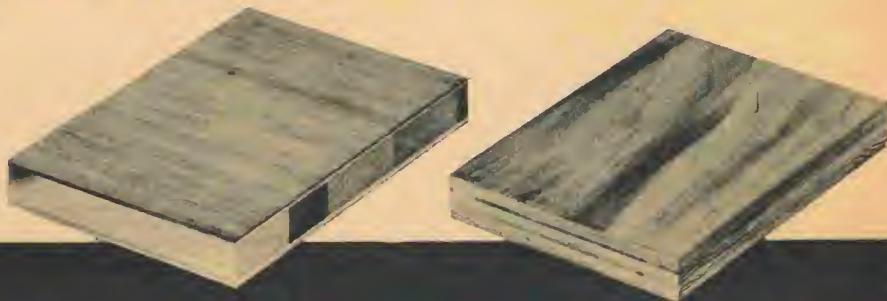


Courtesy U. S. Plywood Corp.

Since you'll be expending some time and labor in building the projects in this book, give some thought to your basic material: the wood you use. Plywood is available in many attractive veneer facings. At left is a typical African mahogany grain pattern. Birch, which has a more contrasty pattern, is shown at right.

Two samples illustrate difference in makeup between lumber core and laminated plywood.

Photo by Fawcett Studio



Some lumber yards have facilities to cut plywood panels to any size or shape you require. If you have such a yard in your neighborhood, your only job will be to assemble the precut elements of any project.

Courtesy Douglas Fir Plywood Assn.





Let's go through a typical project, the Round Coffee Table, shown on pages 16-19. Disk may be laid out with thumbtack, piece of cord, and pencil.



For all of the projects requiring several identical members (legs, etc.), make appropriate templates. These assure accuracy, economy of plywood.

rather than laminated. You'll notice from the photograph on the previous page that while the laminated plywood is a sandwich of five layers topped by the exterior veneers, the center of the lumber-core sample is composed of $\frac{3}{16}$ -inch-thick poplar stock inserted in the same direction as the grain of the veneer. When this lengthwise edge is exposed, it resembles solid stock, and can be finished in the same manner as the rest of the wood, or slightly stained. Methods of treating laminated edges are discussed in the chapter on finishing, pages 128-137.

Careful preparation is the first step to any building job. To insure accuracy, and also to enable you to lay out your components so that you use as little lumber as possible, it is recommended that you use templates wherever possible. Consider, for example, Project 2 (Round Coffee Table). After getting your plywood, cut out a cardboard template for the legs. After drawing the disk for the top, you can use the template to determine how to achieve the simplest and most economical layout, as indicated in the photographs. The use of

Best of all is a band saw for a job like cutting these legs. Rough out legs with a hand or power saw, then nail them together through waste area.

Most band saws have the capacity to accommodate all four $\frac{3}{4}$ -inch-thick legs simultaneously. Result: uniform leg heights and stable, wobble-free units.





Once all of your parts are penciled in, you can begin cutting them out. If you have no power tools, a keyhole saw can be used for this operation.

templates will greatly facilitate all of your layout work.

Of course, some lumber yards have the facilities to cut lumber to any specifications you desire. If there are such yards in your neighborhood, your only job will be to assemble the components and to finish your units as you see fit.

If, however, no such facilities exist, or if you want to build these pieces for the sheer satisfaction of it, what tools will you need? It goes without saying that power tools will expedite matters considerably,



Portable power jig saw, obviously better than a hand tool, may be employed. Some of these aren't designed for $\frac{3}{4}$ -inch wood, so move them slowly.

but hand tools can be used. Returning again to Project 2, which is a typical table project, there are several ways in which you can cut out the components once they are laid out on your plywood. The basic method, of course, is to use a keyhole saw. This is rather hard work, and the legs will require quite a bit of sanding.

An easier method is to use a portable jig saw. Although not designed for $\frac{3}{4}$ -inch woods, you can do the job if you take it easy. If you're lucky enough to have access to a band saw, you're really in business.

Cutting disks is a little trickier. These, too, can be cut by hand or power jig, but again the band saw is your best bet. After cutting legs from your panel, find center of underside of the remaining rough-cut disk; attach cleat with hole to engage dowel, left. At right is worm's eye view of jig, fully described in text.





Cutting of the top disk completes the major elements of the Round Coffee Table. The only piece not in the photograph is the 6 $\frac{1}{4}$ -inch-square block.

You can rough out all of the legs with either a keyhole or portable jig saw, then attach the four roughs, nailing into the waste.

After the legs are completed, the disk can also be cut by any one of the methods already mentioned. If you have a band saw, you can quickly make up the jig shown in the photos. This consists of a length of 2x6-inch scrap or anything similar to it. Bore a $\frac{3}{4}$ -inch hole about 1 inch deep in the forward end of the piece, then insert a dowel in the hole so that its upper end is on the same level with your band saw table. You can stiffen the dowel by nailing a cleat, which has a $\frac{3}{4}$ -inch hole bored right through it, over the dowel into your scrap. Position the 2x6 so that it lines up with your blade and nail it to your workbench. Dowel should be $\frac{1}{2}$ disk diameter from blade. The next job is to find the center of your disk on its underside. This can easily be accomplished by drawing a line through the center of your top surface (which has already been indicated by a compass needle or thumbtack when you laid out the circle). Extend the line to the very edges of your roughed-out disk; with a square, carry the line over the plywood edges, and then onto the underside. You can then measure to the center of the line.

Make another cleat with a $\frac{3}{4}$ -inch hole bored all the way through and brad it to the underside of the wood. In cutting, this

MITER BOX AND BACK SAW



1. If cutting dowel tenon with a back saw, first scribe the depth of the tenon with a marking gauge.



4. When you reach the bottoms of the saw cuts, shave off all excess wood around circumference.

CIRCULAR SAW



1. Dado cutter is used here, but standard blade works. Turn dowel against clamped miter gauge.



2. Miter box of this type can be adjusted to hold the saw at any level. Make a series of saw cuts.



3. Indicate on end of dowel the size of the desired tenon, and begin roughing out with a chisel.



5. To round off the tenon, clamp the dowel firmly in a vise and sand down with strip abrasive paper.



6. Finished tenon is smooth and well centered. An easier way to achieve same results is shown below.



2. The rough tenon after dadoing may be used as is, if desired, to obtain a better bond with the glue.



3. If you want a smooth tenon, however, follow the same procedure depicted in Photo 5 above.

HORIZONTAL BORING MILL



1. Same effect can be achieved by boring into the end of large dowel, then inserting a short pin. Brace and bit or a power drill may also be employed.



2. Notice that the miter gauge is clamped in such a position that the drill meets the exact center of large dowel. Hole should be at least $\frac{3}{4}$ inch deep.



3. A $\frac{3}{4}$ -inch pin is now inserted, and you have, in effect, a tenoned dowel end. Pin is glued in place. If you use this method, allow the glue to dry.



Although nails are specified throughout, you may want to use screws for some projects. If you do, be sure to countersink pilot holes for neat joint.



Two methods of hiding your fastenings: screw at left has been countersunk; finishing nail is being sunk below the surface of wood with punch.

last cleat is simply engaged by the upright dowel, and all you have to do is to rotate the plywood on this axis. This little jig will give you a perfectly true circle that will require a minimum of sanding.

Another important detail that you will come across in several of the projects will be making tenons on the ends of dowels. The three groups of photographs show the best ways of tackling this operation with hand or power tools.

A good miter box and back saw will be required if you work with hand tools. First scribe the depth of the shoulder around the dowel's circumference. After setting your miter box to the required height, make a

series of cuts with the back saw and chisel out the shoulder. Finish by sanding with strip abrasive paper.

With a circular saw, the job is a snap. A dado cutter will make things go faster, but you can get the same effect by making multiple cuts with an ordinary blade. Clamp your miter gauge at the desired position, and set your rip fence so that the end of the dowel fits snugly against it, for you will be cutting *outward* from the bottom of the shoulder. Set the blade at whatever depth you desire. Turn on your motor, carefully lower the dowel in place, and gently turn the dowel against your miter gauge. Only a few passes will be required, and you'll be



The resultant holes are filled with wood composition filler. After filler dries and is sanded flush with surface of the wood, both screw and nail are practically invisible.



Shallow finger cups can be used for Sliding-Door Cabinets instead of wooden pulls. They are very easy to install and lend a professional appearance to your work.

left with an accurate, well-centered tenon.

Another way of tackling this problem is to bore into the end of a large dowel ($1\frac{3}{8}$ or $1\frac{5}{8}$ -inch diameters are used through-out), and then insert a $\frac{3}{4}$ -inch dowel pin. This gives the same effect as a tenon. A horizontal boring mill is ideal for this purpose, as proven by the photos of the Shopsmith used in this capacity. The same thing can be done with a brace and bit or an electric drill, but under this setup you must be sure that the tool is being held perfectly straight.

Even if your tenons are somewhat smaller or larger than the plans indicate, you can simply alter the size of the holes that will accept them, so it might be wise not to prebore any of the tenon holes until the tenons themselves have been cut.

Although finishing nails are indicated

throughout as fasteners, you can use flat-head wood screws if desired. These should be countersunk, and then filled over with wood putty, which can be sanded flush with your surface. Nails, however, have proven more than adequate with all these projects, and the use of screws is entirely optional.

Several of the pieces will require simple hardware catches, pulls, shelf supports, all of which are available at your local store.

You can also substitute short dowel pins for the metal shelf supports wherever they are specified, but the metal units are very good and are easier to withdraw than wooden dowels.

These factors cover the general high points of construction and assembly. More specific instructions accompany the respective projects which follow. •



To insert finger cups of this type, simply bore a hole of the same diameter all the way through your material. All you have to do now is to press the finger cup in place.



Metal shell supports usually come with shafts of $\frac{3}{8}$ or $\frac{1}{4}$ inch. Be sure to measure diameter of metal pin before boring holes. These are used in Projects 3, 8, and 11.



In the absence of metal supports, $\frac{1}{4}$ -inch dowel pins make serviceable substitutes. However, these are more difficult to remove and to reinsert at different positions.

project 1



rectangular coffee table

The legs of this easily assembled unit may be cut to any height required to blend with your present furnishings. It's ideal for playroom or foyer.

BILL OF MATERIALS

Note: All lumber is $\frac{3}{4}$ " plywood.

1 Table Top 20"x40"

4 Legs cut to size shown.

(Four lengths are possible, as indicated in the sketch.)

8 Hardwood Cleats $1\frac{1}{2}$ "x4"

4 Flathead Wood Screws $2\frac{1}{4}$ " No. 10

24 Flathead Wood
Screws $1\frac{1}{4}$ " No. 10

Glue

YOU'LL be able to find a multitude of uses for this easily assembled table. Note that the legs may be cut to one of four heights; this makes it easy for you to adapt the table to whatever seating arrangements you now have.

Construction procedure: After cutting the elements to size, trace the positions of the legs and cleats on the underside of the

After tracing positions of legs and cleats on underside of the table top, bore holes for the long screws, but do not insert them at this stage.



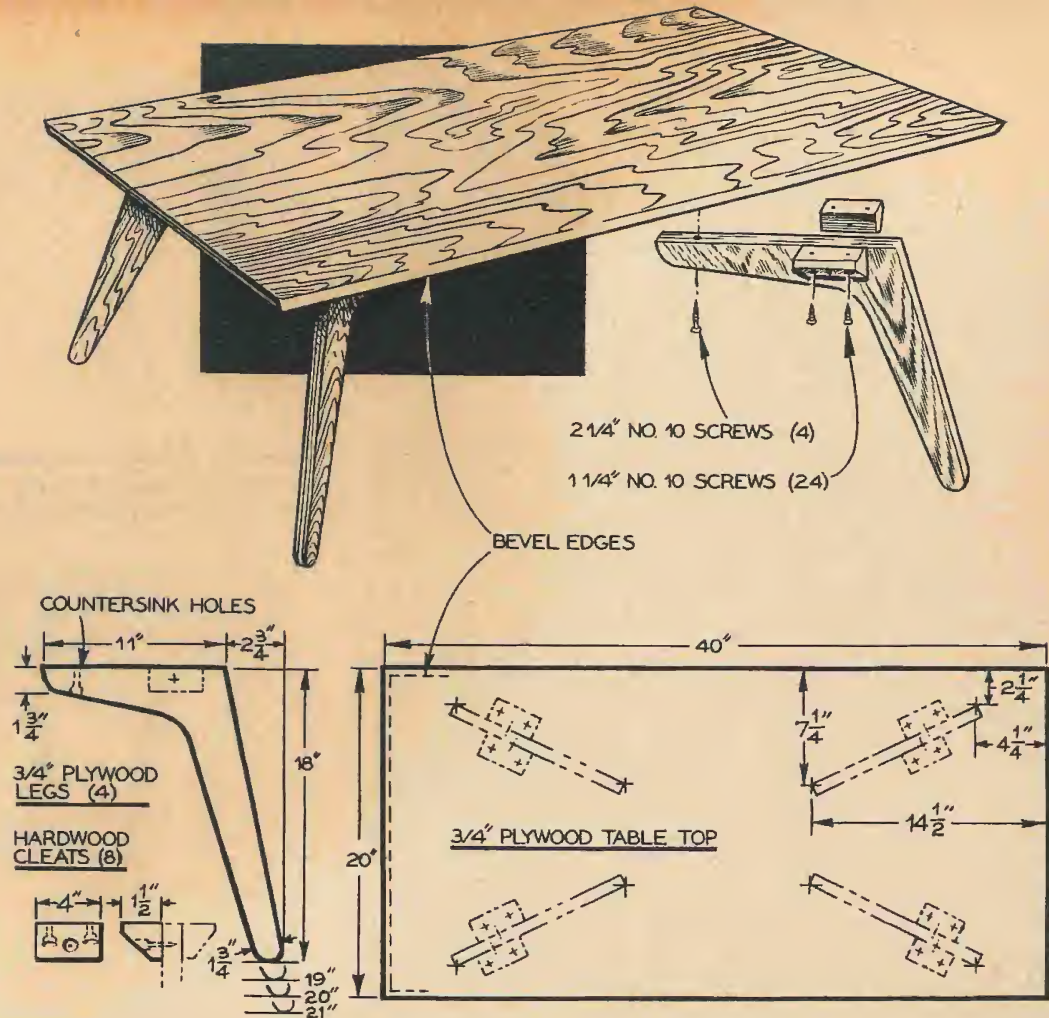


table top. Drill holes for the 2 1/4-inch screws, one in each leg, but do not insert the screws at this point. Be sure that these screws will not project into your table more than about 1/2 inch, or they will penetrate the surface of the table top.

Apply glue to the traced areas on the table's underside and also to the top edges of the legs. Rub screw threads with soap,

and screw one of the corner cleats to the table top. Place a leg in its indicated position, push the opposite cleat firmly against the leg, and screw the second cleat to the top. Now screw the leg to its braces, and finally insert the 2 1/4-inch screw through the prebored hole. Now attach other legs.

This completes assembly. Sand well, and finish as desired. •

Each cleat is first screwed to the table top with pair of 1 1/4-inch screws, then the cleats are attached to the leg with screws of the same size.



Final phase of assembly: Insert the four long screws through the prebored holes, making sure they project no more than 1/2 inch into table top.



project 2



In Type A, the legs are mounted in a conventional manner, and are assembled around a $6\frac{3}{4}$ -inch-square plywood block.



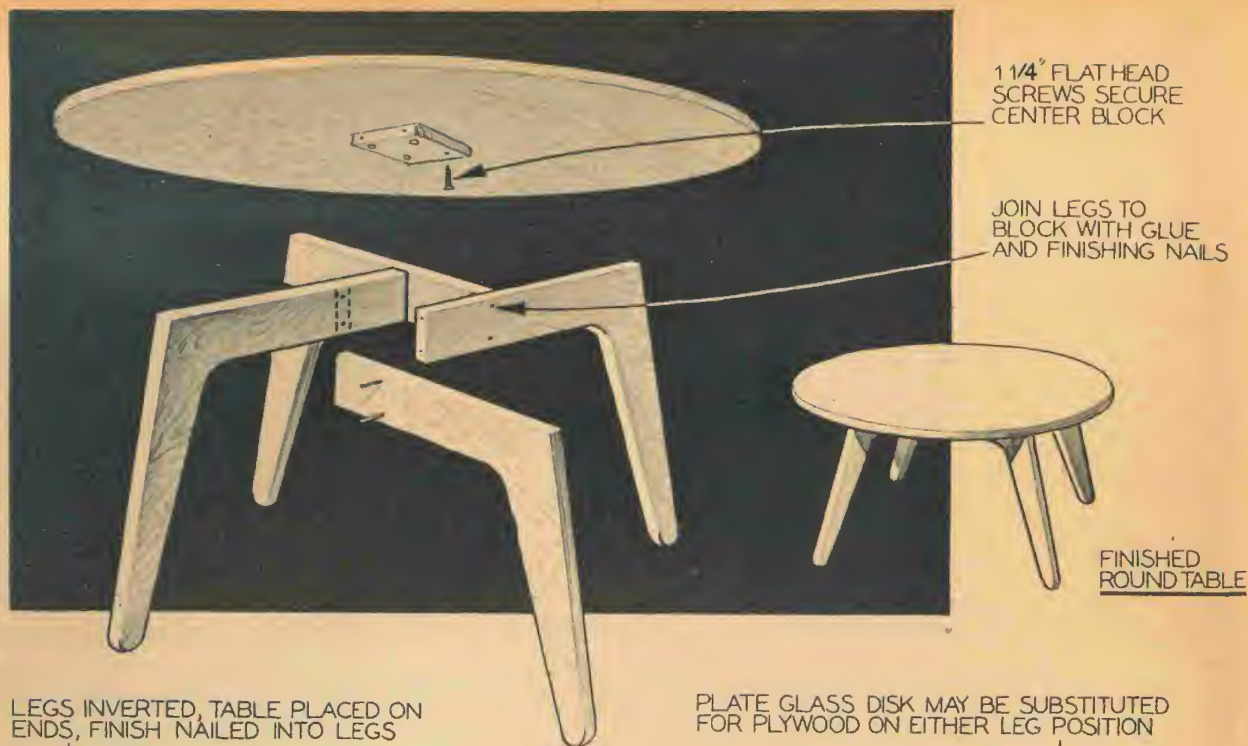
In Type B, the leg assembly is inverted, and the block is used only as a template around which the legs are positioned and then attached with $1\frac{1}{2}$ -inch nails.

round coffee table

Offering a wide variety of arrangements in height, size of table top, and method of attaching the legs, this unit is nevertheless a snap to construct.

MANY variations are possible if you use this design as your starting point. You can make a very low large-surfaced table, or a small relatively high one simply by altering the size of the top in relation to the legs. Also, the leg assembly can be used in two ways, as shown in the photos and sketches. However, since there is a slight difference in construction procedure between Type A and Type B, decide on which style you want to build before getting under way.

Type A: After cutting out all the components, glue and screw the center block to what will be the *underside* of the table. After dabbing glue onto the tops of the legs, place one leg next to the block so that the end of the leg is flush with the end of the block. Now place the second leg at right angles to the first, glue and nail the legs together, and add the remaining



LEGS INVERTED, TABLE PLACED ON ENDS, FINISH NAILED INTO LEGS

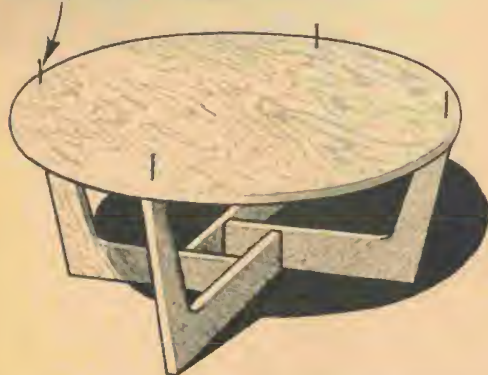
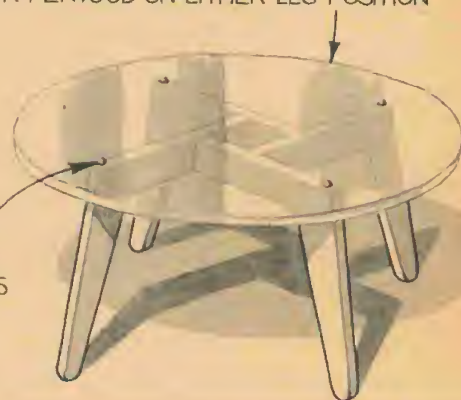


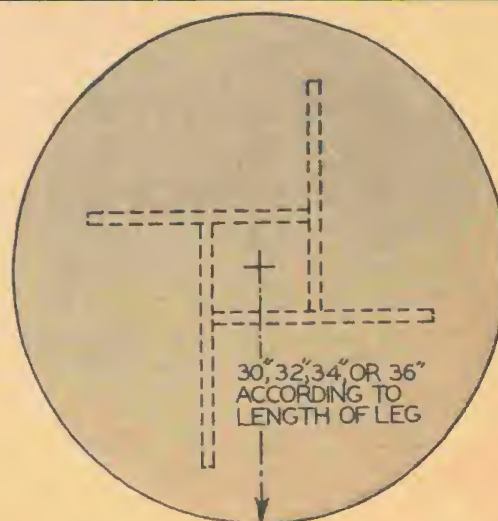
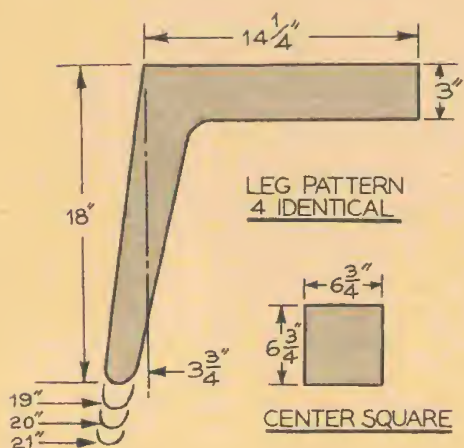
PLATE GLASS DISK MAY BE SUBSTITUTED FOR PLYWOOD ON EITHER LEG POSITION

USE RUBBER HEAD TACKS INTO LEGS UNDER GLASS



Above: Disks of plate glass or plastic may be used in conjunction with either leg assembly. Below: Many variations are possible simply by changing the proportions of the top or the height of the legs.

TABLE TOP AND LEGS ALL FROM 3/4" PLYWOOD





BILL OF MATERIALS

Note: All lumber is $\frac{3}{4}$ " plywood.

4 Table Legs cut to size shown.

1 Table Top 30" diameter
(Proportions of legs and tops may be altered as indicated in bottom sketch on preceding page.)

1 Center Block . . . 6 $\frac{3}{4}$ " square

1 $\frac{1}{2}$ " Finishing Nails $\frac{1}{2}$ lb.

4 Flathead Wood

Screws 1 $\frac{1}{4}$ " No. 8

Glue

two legs in similar manner. If desired, the legs can also be nailed to the block itself. Thus, in one simple series of nailing operations, leg assembly is fastened to the top.

Wipe off any excess glue, and turn the table right-side up. To obtain extra rigidity, insert a finishing nail into each leg, driving through the table top. When countersunk with a punch and covered with Plastic Wood, the holes will hardly be visible. Place a heavy weight on the table top and let the glue dry for eight hours.

Type B: In this case, the center block is used only as a template around which the legs are assembled. If building Type B, you should not nail into the block, but only from one leg into the other. Reinforce these butt joints with glue. You now have a leg assembly without the center block.

Turn the assembly with the legs pointing up, and drive one nail through the top into each leg. As in Type A, you can avoid marring the surface by hammering lightly; use a nail set to drive the nails home, sinking them into the wood about $\frac{1}{8}$ -inch. Fill nail holes with Plastic Wood.

After the glue has set, sand the entire piece and finish as desired. •



Type A: Once your elements are cut to proper size, find the center on the underside of your top and apply liberal coat of glue to this area.



Left: Put the block in place and nail, or better still, screw it to the top. Right: Position first leg as shown, and nail it to the center block.



The second leg is then placed flush with the block, and also butted against the first leg. It is then nailed to the first leg and to the block.



Third leg, at lower left, is attached in similar manner, then the last leg goes into place. Finishing nails of 1½-inch length should be employed.



Completed leg assembly should give you quite a strong unit because of the interlocking method of attachment and legs' connection to the block.



If, however, you want extra protection, you can drive one nail through top into each leg. Sink nailheads with punch, cover with Plastic Wood.



Type B: Legs are assembled without block, as described in the text, and top is attached to the leg assembly with a single nail into each leg.

project 3



Photo by Bill Jackson

In this unit, the small shelf at left has been permanently installed, two long shelves are adjustable.

adjustable bookcases

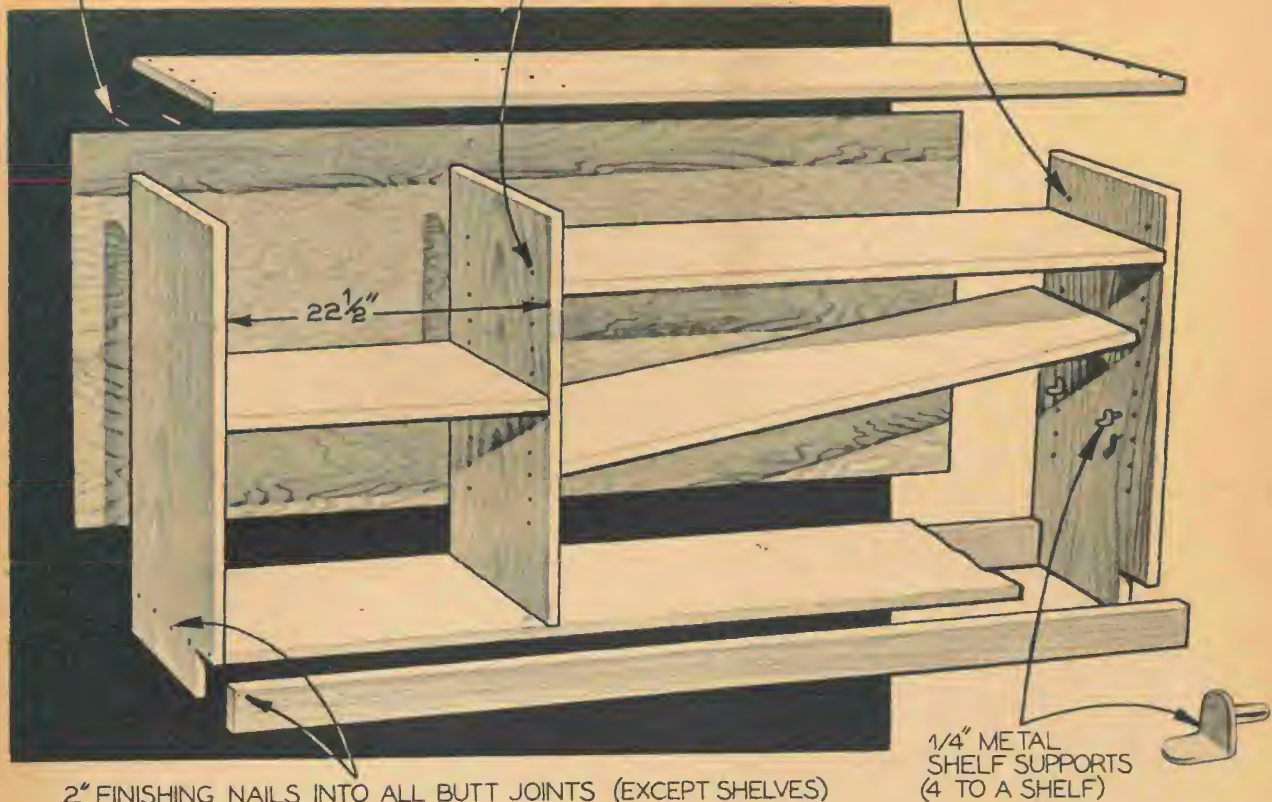
The shelves on these flexible units literally rise to new heights as you acquire oversized books. Take your pick from the five designs shown.

AT least five bookcases of various lengths and designs can be made by employing the same basic idea. Also, since the shelves can be made adjustable, you'll always be able to fit new large books into place by simply pulling out a shelf and reinserting it at a new level. Despite the fact that all these bookcases are of the same height and depth, 29x10 inches, their respective lengths are identical to one, two, or three modular cabinet units (Projects 5 and 8), thus making it easy for you to match up several mixed units in a variety of decorative arrangements. Actually, two of the designs are shown on these

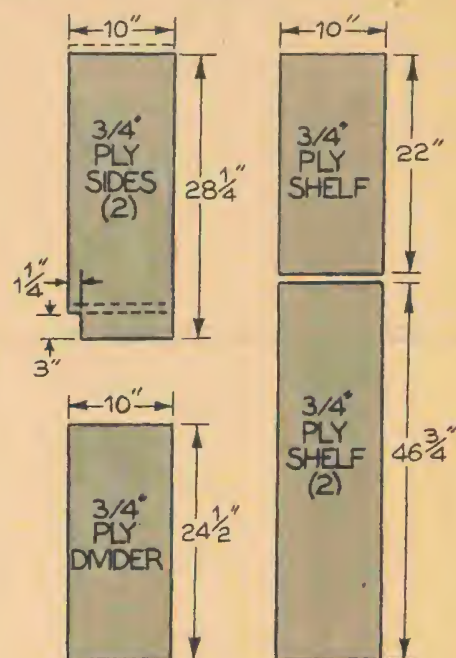
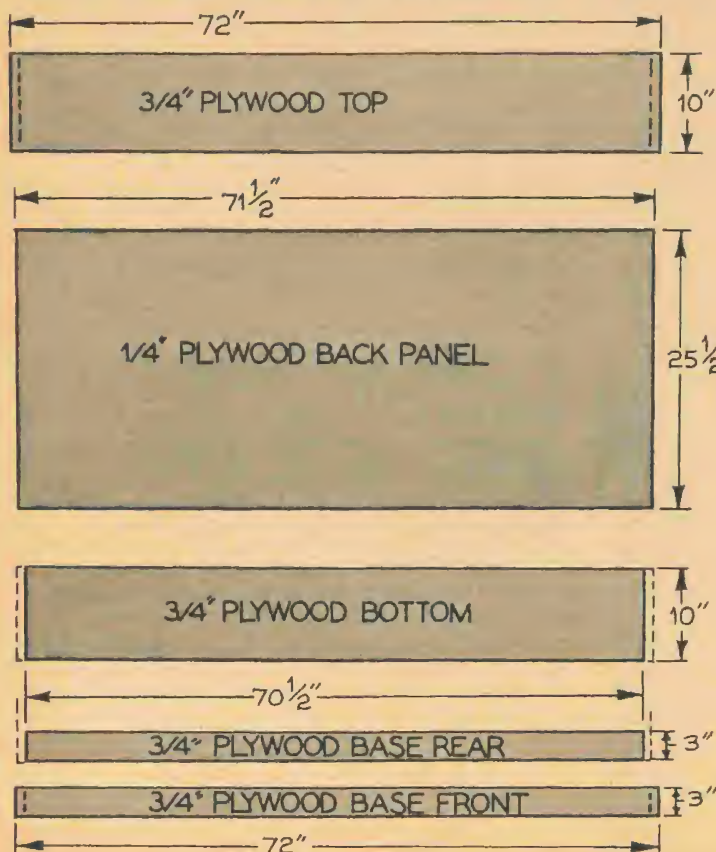
1 1/4" WIRE BRADS INTO BACK PANEL

1/4" HOLES THROUGH SPACED 2" APART

1/4" HOLES - 1/2" DEEP SPACED 2" APART



BY LENGTHENING HORIZONTAL MEMBERS, FIVE OR MORE DESIGNS ARE POSSIBLE



PARTS REQUIRED FOR ASSEMBLING THE BOOKCASE SHOWN IN PHOTOGRAPH

BILL OF MATERIALS

Note: $\frac{3}{4}$ " plywood may be used for any of these bookcases, but $\frac{3}{4}$ " stock lumber (nominal size 1"x10") will probably be easier to work with. If you do use stock, however, do not cut your shelves, rear base, or bottom to size until the basic framework is assembled, as described in the text.

TYPE A

1 Top	24"x10"
1 Bottom	22½"x10"
1 Base Front	24"x3"
1 Base Rear	22½"x3"
2 Sides	28¼"x10"
1 Back (¼" plywood or Masonite)	23½"x25½"
2 Shelves	22"x10"
2" Finishing Nails	½ lb.
1¼" Wire Brads	½ lb.
¼" Shelf Supports	8

TYPES B OR C

1 Top	48"x10"
1 Bottom	46½"x10"
1 Base Front	48"x3"
1 Base Rear	46½"x3"
2 Sides	28¼"x10"
1 Upright Partition (Type C only)	24½"x10"
1 Back (¼" plywood or Masonite)	47½"x25½"
2 Shelves (Type B only)	46"x10"
4 Shelves (Type C only)	22½"x10"
2" Finishing Nails	½ lb.
1¼" Wire Brads	½ lb.
¼" Shelf Supports (Type B only)	8
¼" Shelf Supports (Type C only)	16

TYPES D OR E

1 Top	72"x10"
1 Bottom	70½"x10"
1 Base Front	72"x3"
1 Base Rear	70½"x3"
2 Sides	28¼"x10"
1 Upright Partition (Type D only)	24½"x10"
2 Upright Partitions (Type E only)	24½"x10"
1 Back (¼" plywood or Masonite)	71½"x25½"
2 Short Shelves (Type D only)	22"x10"
2 Long Shelves (Type D only)	46¾"x10"
2 Center Shelves (Type E only)	23½"x10"
Four End Shelves (Type E only)	22"x10"
2" Finishing Nails	1 lb.
1¼" Wire Brads	½ lb.
¼" Shelf Supports (Type D only)	16
¼" Shelf Supports (Type E only)	24



pages: Type D is depicted in the lead photograph, while the pictures showing assembly are concerned with Type B. However, the fundamental construction principles which apply to all versions can be easily grasped from the latter.

Construction procedure: Although plywood may be used for these bookcases, and is indicated in the sketches, you will find it much easier to work with 10-inch stock lumber. Just make sure when you buy the lumber that it is all the same width, for lumber width varies slightly from mill to mill. Even if the lumber doesn't measure a full 10 inches (it will probably be around 9⅝ inches wide), the important thing is that every plank be identical *in width*.

After cutting the side pieces, make the recesses in their front bottom edges; these will accept the base front. To make the shelves adjustable on Types A and B, drill ¼-inch holes for shelf supports into the *inside* faces of the sides. Be sure not to drill the holes deeper than ½ inch. You can make a depth gauge by wrapping a piece of masking or adhesive tape ½ inch from the end of your drill bit.

For types C, D and E, in addition to drilling holes in the sides as described above, you will also have to drill ¼-inch holes all the way through the upright partitions, if you want adjustable shelves. If, on any of these units, you want the shelves to be

1. The following series of photos show the assembly of Type B, the 48-inch-wide bookcase. After cutting pieces to size and making recesses in the sides, bore $\frac{1}{4}$ -inch holes in sides to accept the shelf supports.



2. Now attach the 3x48-inch base front in the recesses. Position so that it is flush with the sides, and attach it firmly with 2-inch finishing nails. Note nails partially driven in the sides for the base rear piece.



3. Next install the 3x46½-inch base rear strip between the sides and flush with their bottom edges. If glue is employed to reinforce both of these base pieces, apply it to both of the surfaces to be joined.





4. When nailing the base rear in place, push unit against a wall, then hammer in the nails. The framework will stand erect after this phase.



5. If you made your cuts carefully, you'll find that the bottom just fits in between the ends. Lay it in place on both the front and rear bases.

installed permanently, you can forego the entire drilling operation and simply nail the shelves in place during assembly. However, under this procedure, with Types B, C and D you will have to stagger the shelves in order to nail them.

Assembly: First attach the sides to the base front and base rear with 2-inch finishing nails. Note that although the base front extends to the outside edges of the sides, the rear piece fits between the sides. The bottom is now added, and is attached to both sides and both base pieces. If you work with stock rather than plywood, it might be a good idea to first nail the top to the sides, and then cut the other elements, just to be on the safe side. In this way, you'll have a definite width to go by.

For C, D, and E, attach the upright dividers into position with 2-inch finishing nails driven through both the top and bottom. Attach the $\frac{1}{4}$ -inch plywood or Masonite back with $1\frac{1}{4}$ -inch wire brads. You can use this back to square the frame. Sink all nailheads into the wood about $\frac{1}{8}$ inch, and fill the holes with Plastic Wood.

In the absence of metal shelf supports, $\frac{1}{4}$ -inch dowels may be used to support the shelves. Be sure to cut all adjustable shelves so that about $\frac{1}{4}$ inch of play remains at either side; if you make them too tight, they will be difficult to remove for installation at other levels. Permanent shelves are, of course, cut to fit tightly. •

8. Nail on the top, but do not sink the nails completely with hammer. Instead, use a nail set to countersink them, then fill with Plastic Wood.





6. The bottom is nailed through both sides and also into the front and rear bases. This method of bookcase construction will always result in a sturdy and rigid unit.



7. The 10x48-inch top panel is now added. Notice position and spacing of the $\frac{1}{4}$ -inch holes that will accept the shelf supports.

9. Since the shelves may be inserted later, this completes the frame. Position your $\frac{1}{4}$ -inch plywood or Masonite back panel, making sure it fits accurately and squarely.



10. Nail the back to the sides, top, and bottom with $1\frac{1}{4}$ -inch wire brads. All you have to do now is to put in your shelf supports, shelves.





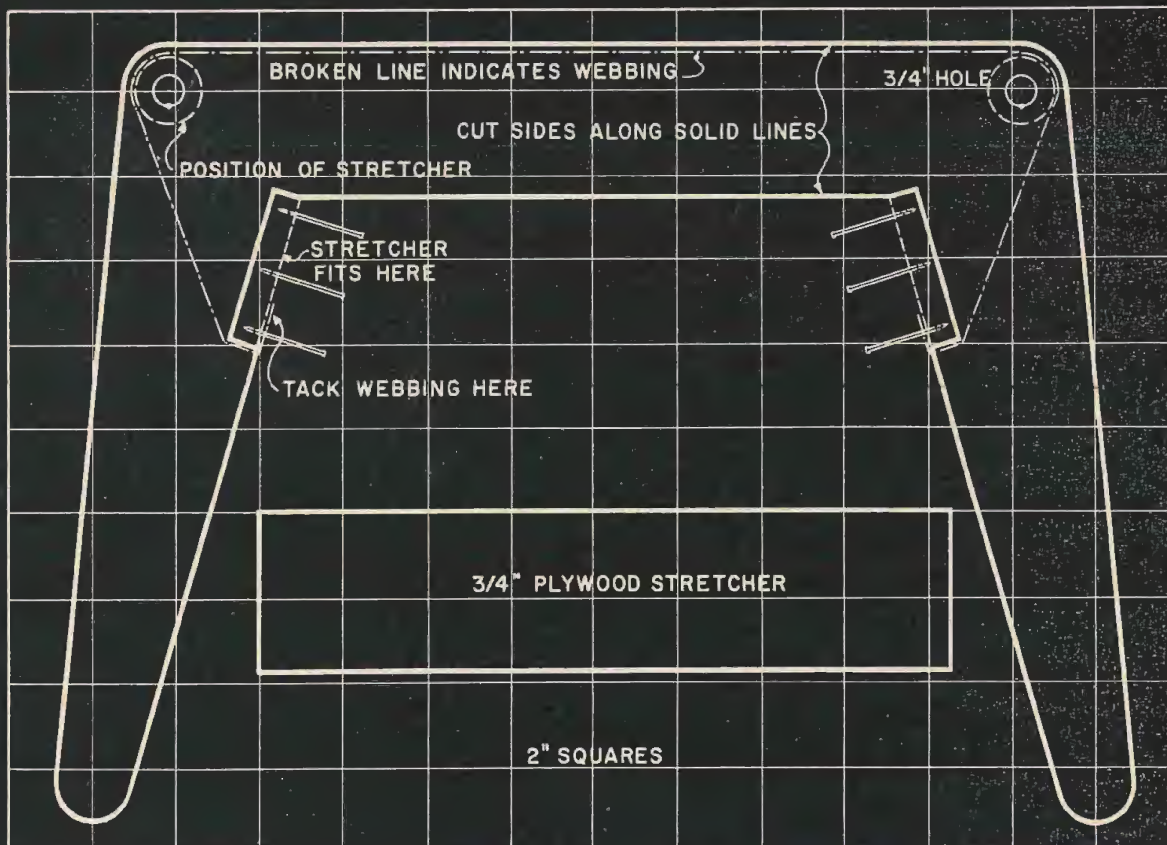
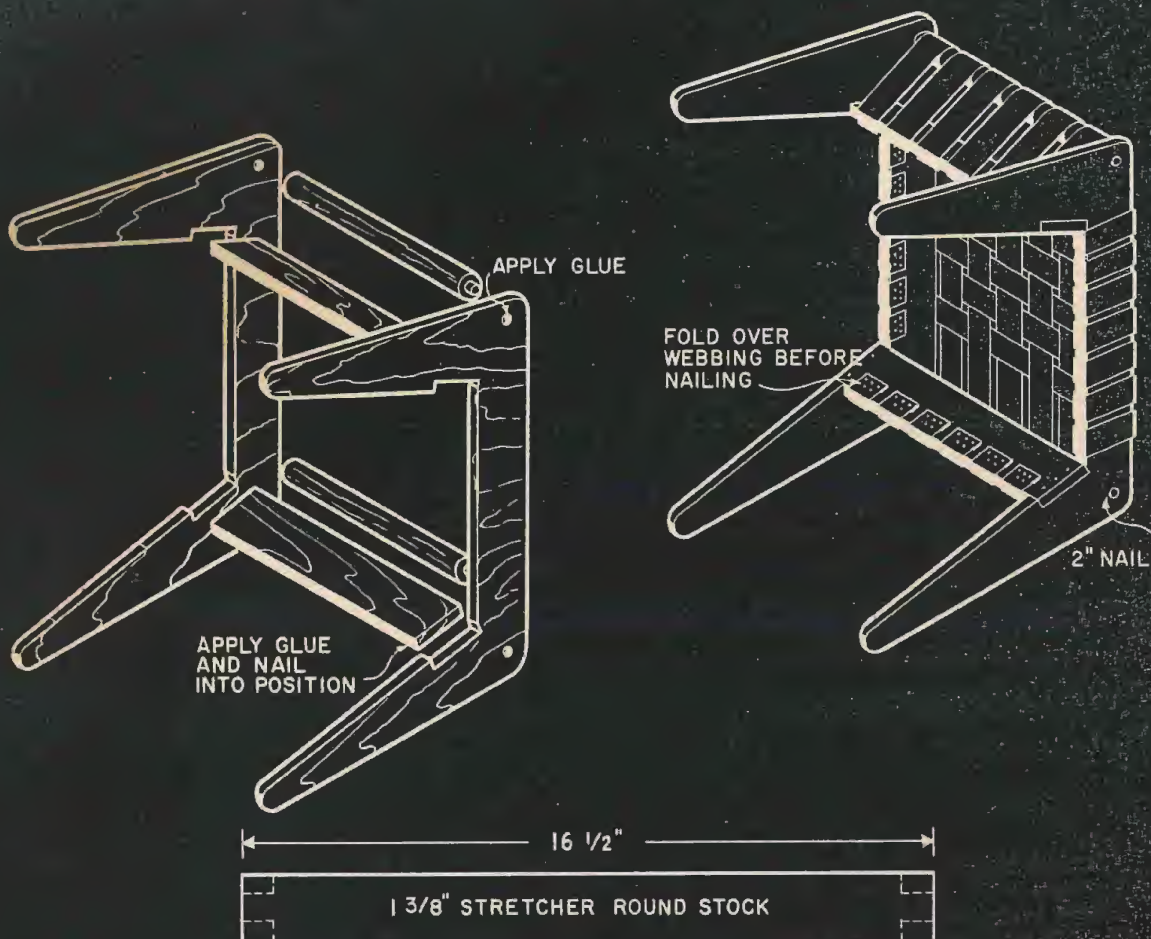
Only six elements, plus webbing, comprise this stool, which will prove useful for any area of your home.

webbed stool

You'll want to make a flock of these 18-inch stools. Cover them with colorful webbings that will match each bench to its own surroundings.

ATTRACTIVE enough to grace any room of your home, this little bench is especially handy when used in conjunction with milady's dressing table or in a child's room. Also, since upholstery webbing is available in many shades and colors, you can easily match this unit to your present decor.

Only six elements comprise the frame: two plywood sides (shown on a 2-inch grid in the sketch to help you lay them out), two 16½-inch lengths of 1⅜-inch dowels, and two ¾-inch plywood stretchers, 3¾x16½ inches. After cutting out the sides and making the recesses for the stretchers in the end pieces (a total of four recesses), bore holes in the sides to accept the dowel tenons.





BILL OF MATERIALS

- 2 Sides, $\frac{3}{4}$ -inch plywood, cut to size indicated in sketch.
- 2 Stretchers, $\frac{3}{4}$ -inch plywood . $3\frac{3}{4}$ "x $16\frac{1}{2}$ "
(To be safe, do not cut these to length until sides and dowel supports have been assembled.)
- 2 Supports, $1\frac{1}{8}$ -inch Dowels $16\frac{1}{2}$ "
- 2" Finishing Nails 12
- No. 6 or 8 Carpet Tacks 1 Box
- 2" Upholstery Webbing 16 Yards
- Glue



Apply glue to tenons and holes, and insert dowels. The plywood stretchers should measure the exact length of the distance between dowel shoulders.

Assembly: Apply glue to the dowel tenons and to the four holes that will accept them. Insert the dowels, first in one side, then in the other. You now have a rather weak structure ready for the stretchers.

At this point, cut the plywood stretchers to exact size. Drive two 2-inch finishing nails part way into the ends of each stretcher. Position each stretcher into its recesses and, after applying glue to all surfaces to be joined, nail them permanently in place. Finally, drive one 2-inch finishing nail into the end of each dowel, as shown in the photo. This completes the assembly. All nailheads should be sunk into the wood about $\frac{1}{8}$ inch with a nail punch. Fill holes with wood putty or composition filler; sand



Position opposite side and after dabbing on some glue, install it in place. Note that the recesses for the stretchers are cut at a slight angle.

the entire unit. Since you won't be able to finish the piece once the webbing is installed, finish now as desired.

Webbing: First cut your lengthwise strips, allowing an inch or so for good measure. Don't forget to compute for the doubled ends. Tack one end to the underside of the stretcher, as indicated in the sketch on page 27. Run it to the opposite stretcher, pull tightly, and tack it on. The transverse webbing, also cut roughly to size, is tacked to the inside face of one side, then interwoven with the lengthwise webbing, pulled tightly, and attached to the opposite side. The number of strips you use, probably six or seven in both directions, will be determined by the exact width of the webbing. •



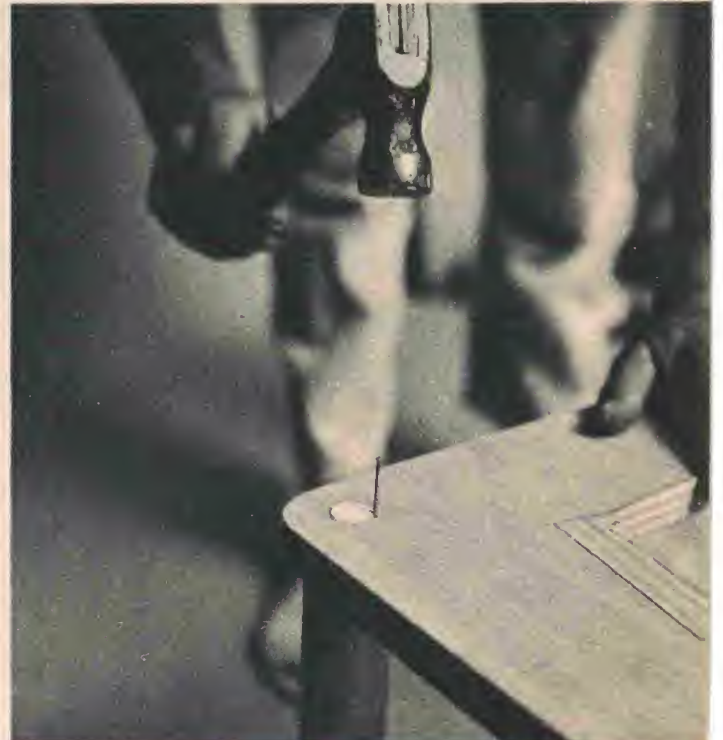
Drive your nails part way into the stretchers before placing them. This prevents excessive wobble.



Stretchers should fit recesses quite snugly if you want a sturdy stool. Use glue at these joints.



Attach both stretchers. Two or three finishing nails, or countersunk screws, will do the job.



As extra insurance, drive finishing nail into each dowel. Webbing operation is described in text.

project 5



Photo by William F. Howland

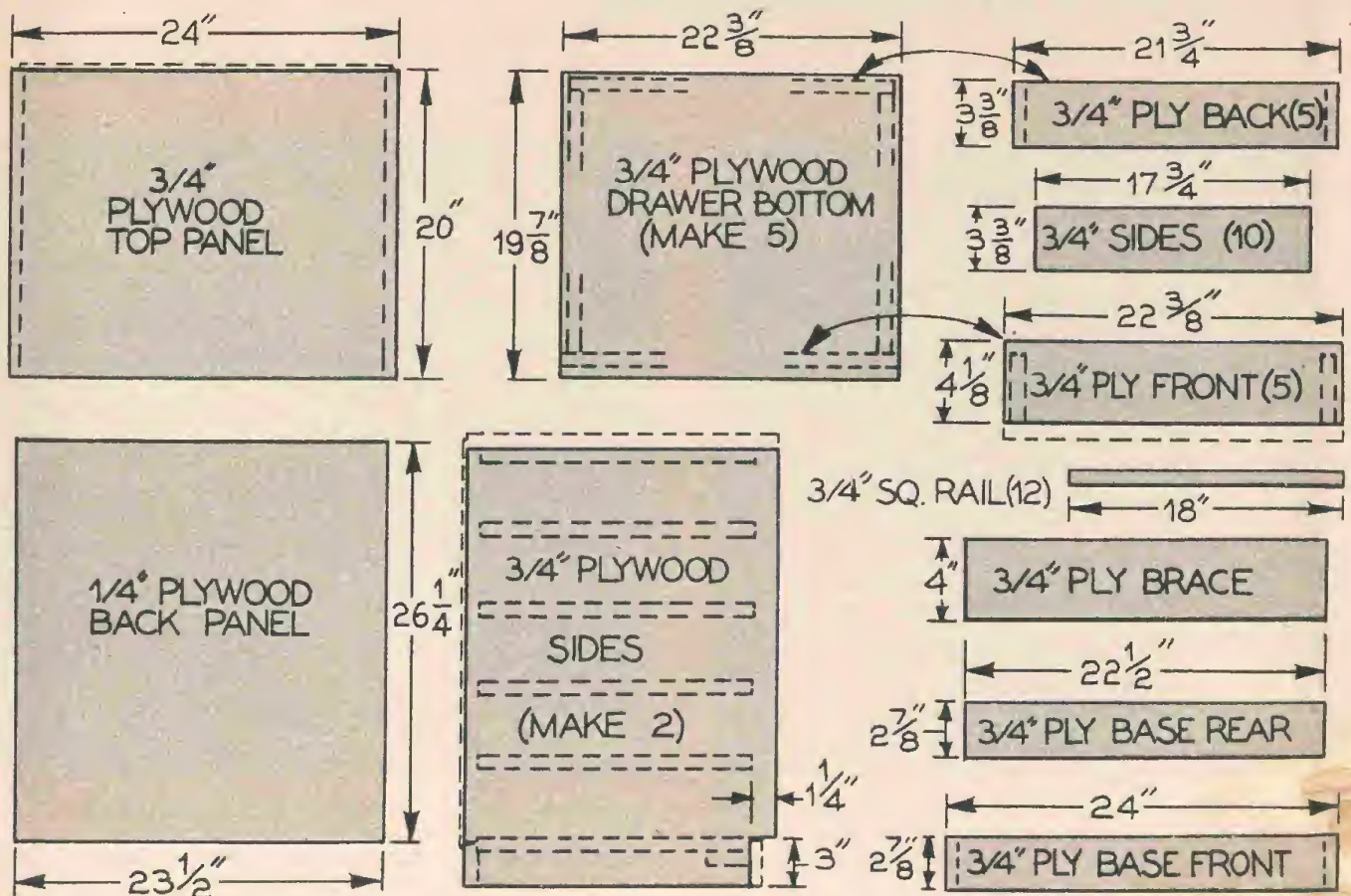
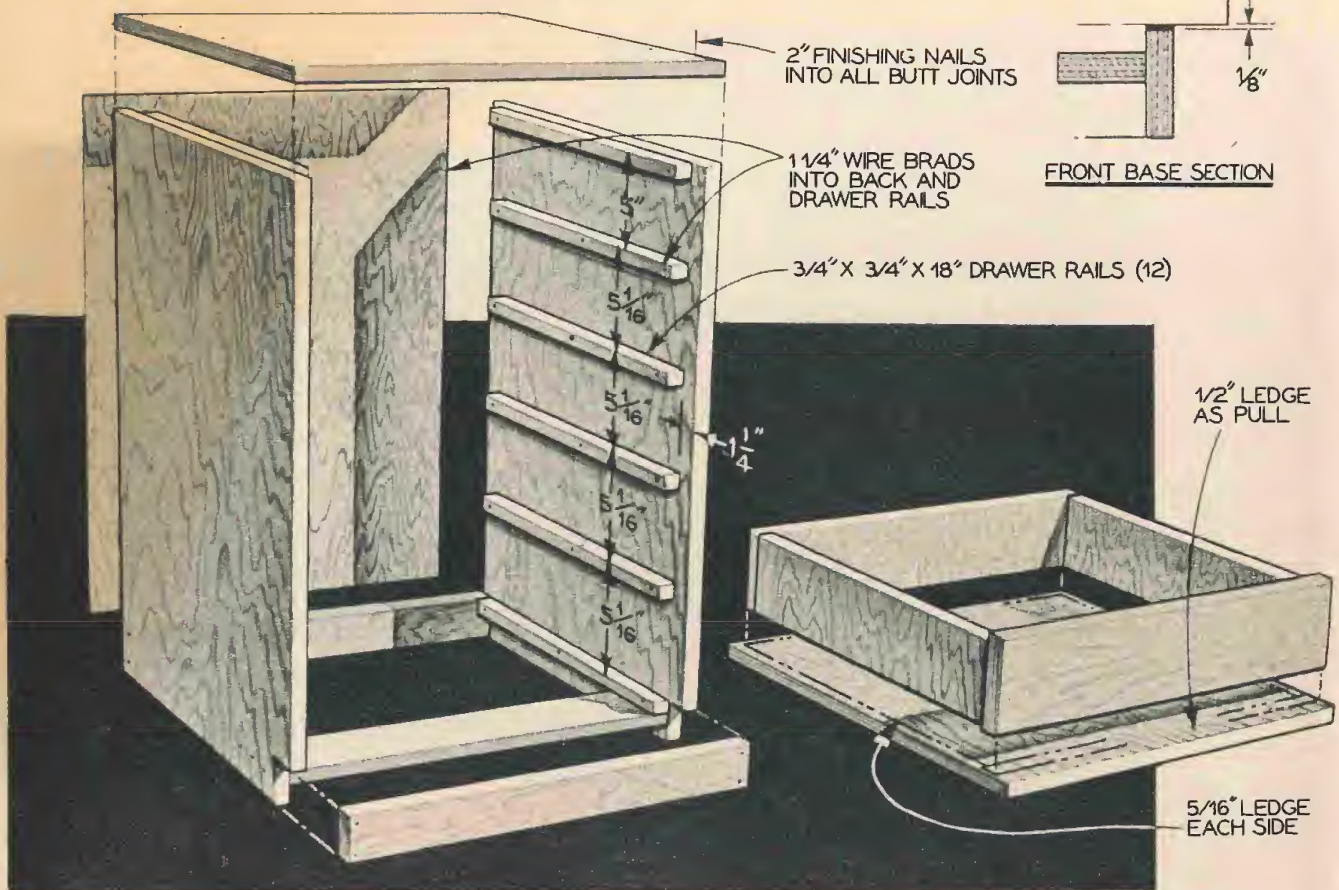
chest of drawers

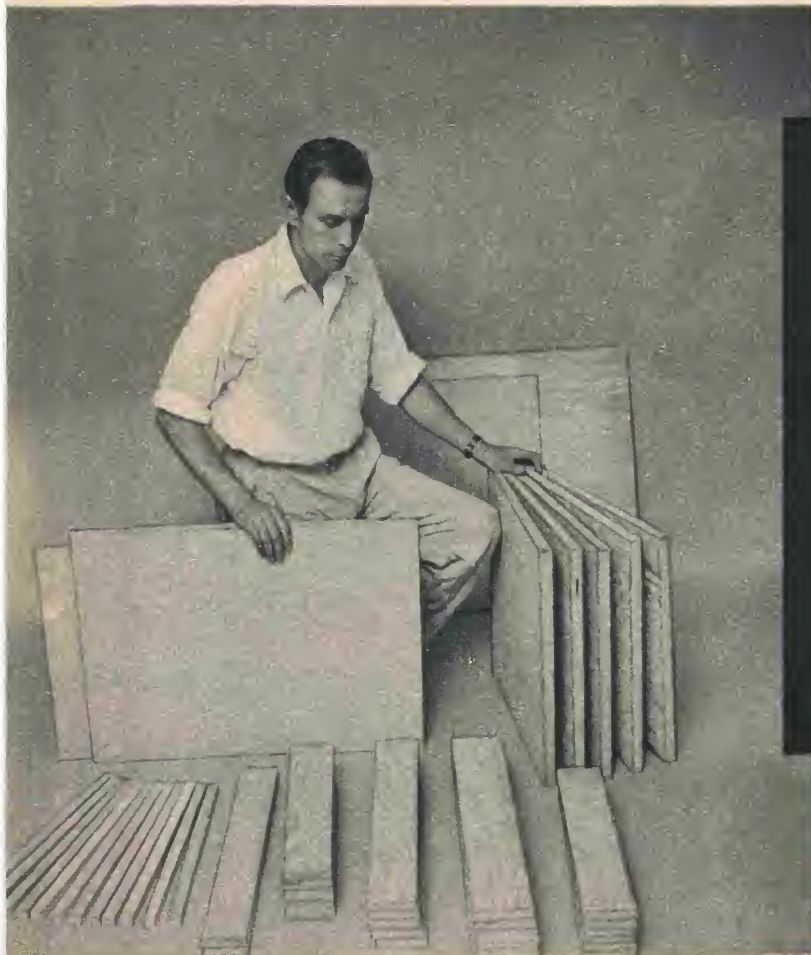
Ample drawer space, an attractive cabinet, and ease of building are all combined factors in this all-plywood unit that you can build in a weekend.

IF you've ever tried to build a piece of furniture incorporating conventionally designed drawers, you're already aware of the many problems involved. Here, however, is a truly foolproof design for five drawers housed in a striking cabinet.

The drawers themselves glide on $\frac{3}{4}$ -inch-square splines nailed to the sides; you'll note also that no drawer pulls are necessary, for the drawer bottoms extend $\frac{1}{2}$ inch beyond the drawer fronts, thus providing built-in pulls.

Cabinet construction: After cutting all pieces to size, saw off the front corner recesses on both sides. Lay out the positions of the twelve drawer slides (six to each side) and attach them with $1\frac{1}{4}$ -inch wire brads. Be sure to recess the slides $1\frac{1}{4}$ inches from the front. (Consult





BILL OF MATERIALS

Note: All lumber, unless other specified, is $\frac{3}{4}$ -inch plywood.

1 Top	24" x 20"
2 Sides	28 $\frac{1}{4}$ " x 20"
1 Base Front	27 $\frac{7}{8}$ " x 24"
1 Brace	4" x 22 $\frac{1}{2}$ "
1 Base Rear	27 $\frac{7}{8}$ " x 22 $\frac{1}{2}$ "
5 Drawer Bottoms	19 $\frac{7}{8}$ " x 22 $\frac{3}{8}$ "
5 Drawer Fronts	4 $\frac{1}{8}$ " x 22 $\frac{3}{8}$ "
5 Drawer Backs	3 $\frac{3}{8}$ " x 21 $\frac{3}{4}$ "
10 Drawer Sides	3 $\frac{3}{8}$ " x 17 $\frac{3}{4}$ "
12 Drawer Slides (pine or hardwood stock)	$\frac{3}{4}$ " x $\frac{3}{4}$ " x 18"
1 Back ($\frac{1}{4}$ -inch plywood or Masonite)	23 $\frac{1}{2}$ " x 26 $\frac{1}{4}$ "
2" Finishing Nails	1 lb.
$1\frac{1}{4}$ " Wire Brads	$\frac{1}{4}$ lb.



1. Cut elements to size, then make recesses in fronts of side pieces. Attach drawer slides to sides at intervals shown in sketch on previous page.



2. Although the top slide, which is flush top with sides, is not a supporting member, it prevents the upper drawer from flopping down when opened.



3. Attach the top to both sides with 2-inch finishing nails. Make sure that both side recesses are facing in the same direction before nailing.



4. The 4x22½-inch brace is butted to undersides of lowest drawer slides. At this point, the base front may be added ⅛ inch from top of recess.

the sketch for exact placement.) After this operation is completed, nail the top of the chest to both sides with 2-inch nails.

At this point, attach the three base pieces with 2-inch finishing nails in the following order: first, the 4x22½-inch brace that fits under the bottom drawer slides. This piece is nailed through the sides; second, the 2⅞x22½-inch base rear, which is also nailed through the sides; third, the 2⅞x24-inch base front, which fits into the recesses cut into the sides. This piece is not butted against the top of the recesses, but is installed flush with the bottoms of the sides, leaving a ⅛-inch gap at the top. The purpose of this is to permit the lowest drawer to slide freely so that its bottom will not strike the base front. If your cuts are on the nose, you can use the sequence shown in the photos for the three base pieces.

Now attach your ¼-inch plywood or Masonite back with 1¼-inch finishing nails, making sure all edges are squarely placed. At this point you have a completely enclosed chest ready for drawers.

Drawers: Before attempting to assemble the drawers, notice that although the sides and backs are identical in height (3⅜ inches), the fronts are ¾ inch higher, or 4⅛ inches high. This added height covers the gaps that would ordinarily be left between each drawer because of the use of the splines, and results in a clean, unbroken chest front.



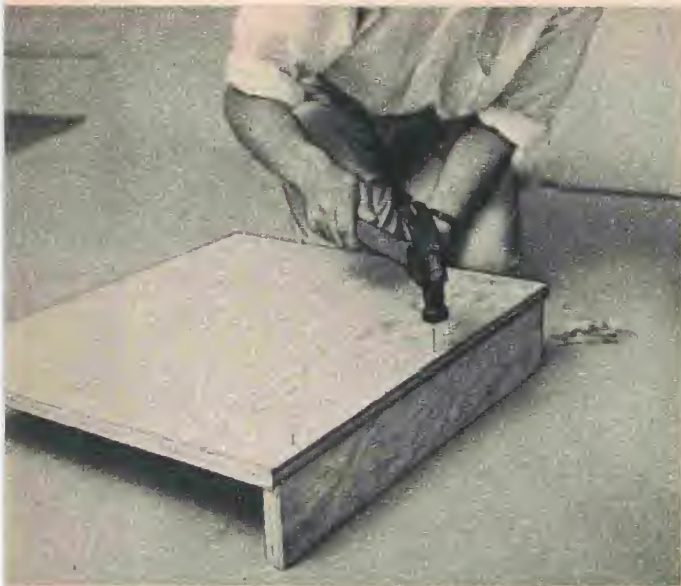
5. Base rear is now nailed flush with bottoms of sides. To be on the safe side, you may want to attach this member before adding the base front.



6. Two nails through each side retain base rear. Note position of base front. The gap, not ordinarily visible, makes bottom drawer slide freely.



7. The $\frac{1}{4}$ -inch plywood back is now attached with $1\frac{1}{4}$ -inch wire brads. Tempered Masonite, wall-board, or stiff beaverboard may be used instead.



8. Drawer construction: First step is to nail the bottom to the back. Notice that the back is recessed $\frac{5}{16}$ inch from the sides of bottom panel.

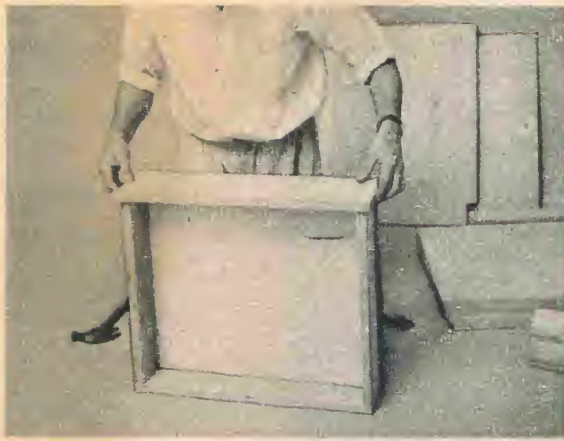
Note, too, that the sides are positioned $\frac{5}{16}$ inch from the edges of the bottom piece. Begin assembly of each drawer by nailing the bottom to the back. (Two-inch finishing nails are used throughout.) Next attach both sides, then the front, again nailing through the bottom. The front panel is now nailed to the sides but only near the very bottom, and the back piece, which was attached only to the drawer bottom, is now



9. Both sides are now added, and are nailed through the bottom. At this stage, all three components have been attached only to the bottom.

also nailed to the sides. Lastly, toenail the front panel at the top to its side pieces. This completes one drawer, and it's probably the simplest drawer ever devised.

Make sure your first drawer fits properly, then repeat the procedure with the remaining four drawers to complete your chest. Sink all nailheads $\frac{1}{8}$ inch and cover with Plastic Wood and sand flush. Sand the entire unit and finish as desired. •



10. Front panel, which is $\frac{3}{4}$ inch higher than the other drawer elements, is nailed near the bottom edge to both sides. The front is recessed $\frac{1}{2}$ inch.



11. The back, which was nailed only to the bottom, is now nailed to both sides to form an interlocking structure. Recess on one side is visible here.



12. Finally, the top edges of front panel are toenailed to the sides. This completes a single drawer. Try it for size, then finish other four.



13. Completed chest ready for finishing. The reason for the $\frac{1}{2}$ -inch recess of drawer fronts is now evident: these areas serve as drawer pulls.

14. Clever finishing method employed paint to cover the fir cabinet. Only the drawer fronts were given a natural finish, and the pull areas were also painted to endow the piece with a unified appearance. An important construction detail can also be observed in this view: the idea behind the extra height of the drawer fronts. Notice that if they were the same height as the other drawer elements, there would be unsightly gaps visible between each of the drawers.

Photo by William F. Howland



project 6



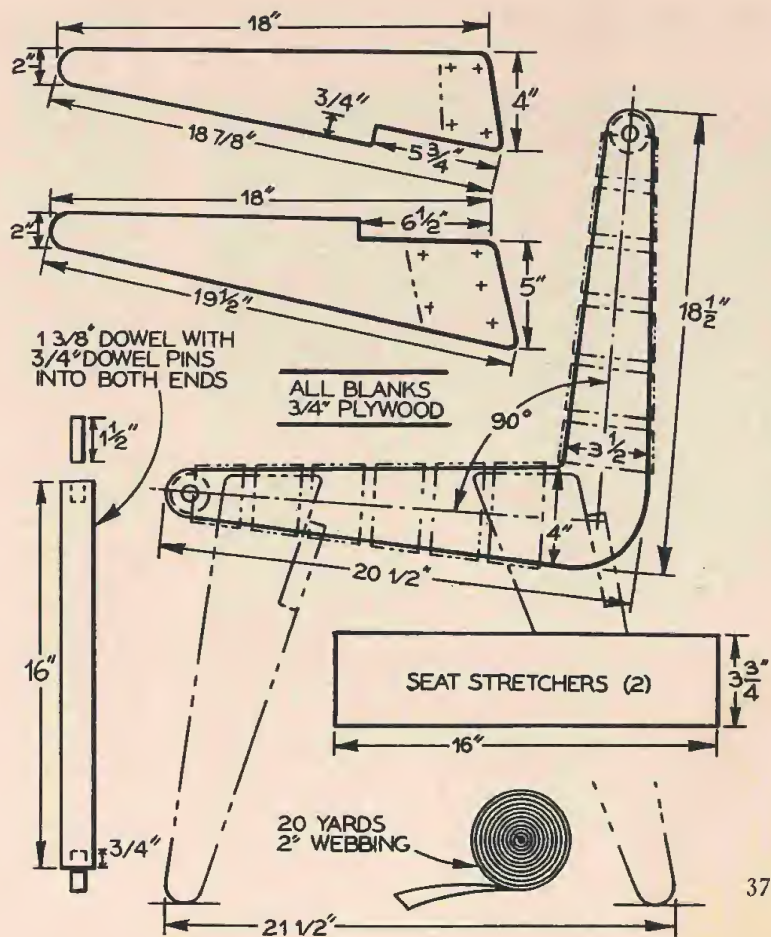
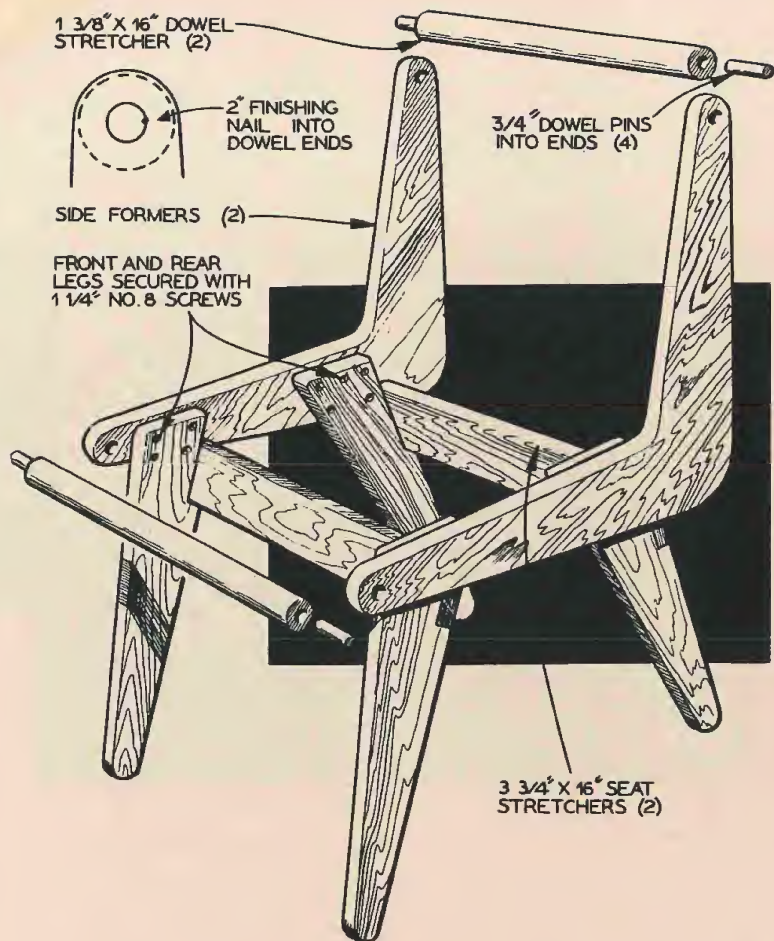
dining chair

Dine in real comfort with a quartet of these distinctive units. Their ample seating area and straightforward design complement any dining room.

CHAIRS are traditionally difficult to make, but this dining chair dispenses with those built-in hazards and wobbles ordinarily encountered. A band saw or a powerful portable jig saw is virtually mandatory, for you'll have a rough time if you try to cut these elements out by hand. This might be a good project to see what kind of cooperation you get from your lumber yard. After you get the pieces cut to size, assembly is quite simple.

Cut all elements, with the exception of the two seat stretchers, to size. On all chair projects, you'll find it best to first assemble the sides and dowels, and then cut the stretchers to fit the resulting structure. In this way, if you're off by, say, $\frac{1}{8}$ inch either way, you can cut the stretchers to exact size. Your chair will still be all right, and you will have circumvented the possible frustration of finding that your stretchers do not fit exactly.

In this project, the sketches illustrate how dowel pins may be inserted into the ends of the large dowel. However, you can use the easier cutout method shown at the bottom of pages 8 and 9.





BILL OF MATERIALS

Note: All lumber is $\frac{3}{4}$ " plywood.
 2 Seat Frames cut to size shown.
 2 Rear Legs cut to size shown.
 2 Front Legs cut to size shown.
 2 Stretchers $3\frac{3}{4}$ "x16"
 2 Dowel Stretchers, $1\frac{3}{8}$ "
 Diameter $17\frac{1}{2}$ " total length
 16 Flathead Wood Screws . $1\frac{1}{4}$ " No. 8
 2" Finishing Nails 16
 No. 6 or 8 Carpet Tacks 1 Box
 2" Upholstery Webbing . . . 20 Yards
 Glue

First attach front and rear legs to one side; screws are driven into inner surface of side.

Repeat operation for other side, but in the opposite direction. Use first assembly as template.



Notice that the front legs are not identical to the rear units and that the recesses for the stretchers also differ in size.

Assembly: After cutting all parts, with the exception of the stretchers, assemble one side by gluing and screwing both legs to their side member. Note that screws are driven into what will be the *inside* area of the chair. Repeat this operation with the remaining side, but again make sure that you're attaching the legs in the right direction so that all legs will fit correctly. You can use the first side as a template in

matching up the angles of the second side. Both sides are now complete.

Now insert glue into the dowel holes and insert both dowels to form your framework. Determine the exact dimensions of your stretchers. Cut them to size, start two 2-inch finishing nails into each end, apply glue, and nail both stretchers into position.

If any of the dowel ends project excessively through their holes, saw or file them flush, then drive a finishing nail into the end of each dowel, as shown in the photograph. This minimizes possibility of

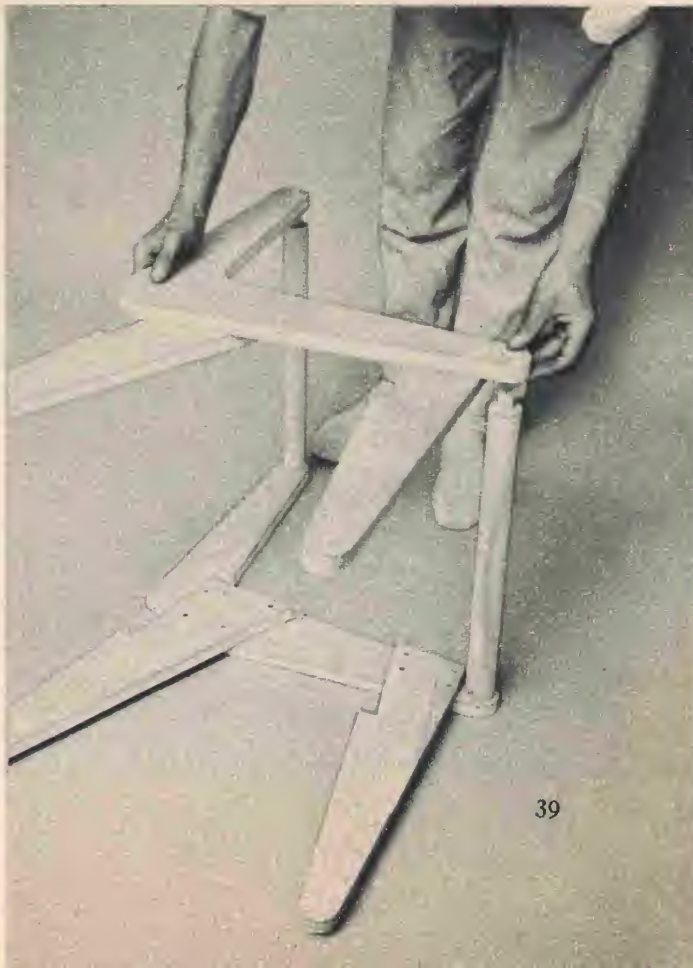
Both completed sides. When assembled, the legs will be on the inside of the frame under the seat area.



Apply glue to the $\frac{3}{4}$ -inch holes and to the tenons. Insert dowels. Notice position of the legs here.



Position opposite side, making sure that legs are on the inside, and engage free dowel tenons.





To prevent wobble during assembly, drive nails part way into stretchers before installing them.



Attach the $3\frac{3}{4} \times 16$ -inch rear stretcher with two or three 2-inch finishing nails through each end.

Front stretcher is now added. Stretchers may be cut to exact length after sides are assembled.

To make sure dowels will not eventually turn or loosen, drive a single finishing nail into each end.





Chair should now be clamped to assure tight glue joints. You can easily rig up a clamping device with some cord and a wooden hanger. Twist cord as shown, and let hanger rest against the upper dowel.

the dowels twisting in case of bad glue joints. All nailheads should be sunk beneath the surface of the wood with a nail punch. Cover holes with Plastic Wood or other wood composition filler.

The chair should not be sanded or finished until the glue has had ample time to dry. You can rig up a very simple clamping device with some stout string and a wooden coat hanger.

After about eight hours in the clamp, the chair is ready to be finished. Once the webbing is on, you obviously won't be able to apply paint or varnish too successfully.

Webbing: Cut 13 strips of webbing 28 inches long and tack horizontally into place with carpet tacks, stretching the webbing

as tightly as possible. Remember to double over the tacked ends for strength. Tack to the inside of the side members wherever possible and to the undersides where necessary. Be particularly neat about the back of the chair, as the tacks will be visible in that area.

Now cut 7 strips of webbing 38 inches long and tack vertically to the front dowel. Interweave with the horizontal webbing, and tack to the top dowel. Do not stretch too tightly. Vertical strips of webbing carry no weight; they only help to distribute the load and, if pulled too tightly, create an ugly bulge. See Working With Webbing for a photo story of a typical webbing operation. •



project 7

When base is in horizontal position, table top is 20 inches from the floor. Note magazine shelf under top.

convertible table

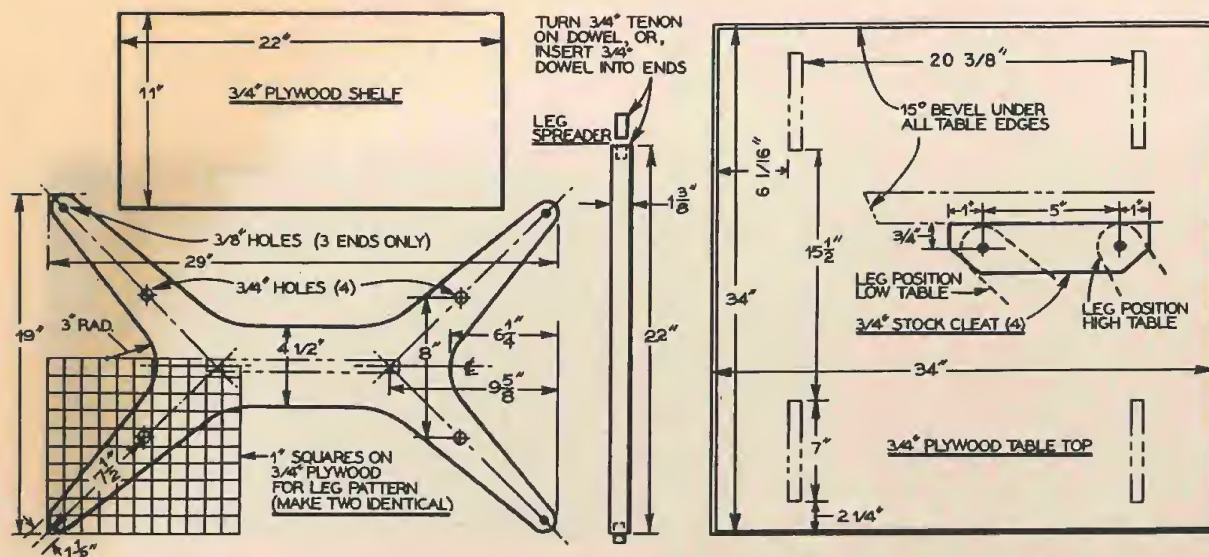
The dual-purpose base of this versatile unit enables you to use it as either a low-slung, modern coffee table or as a man-sized dinette.



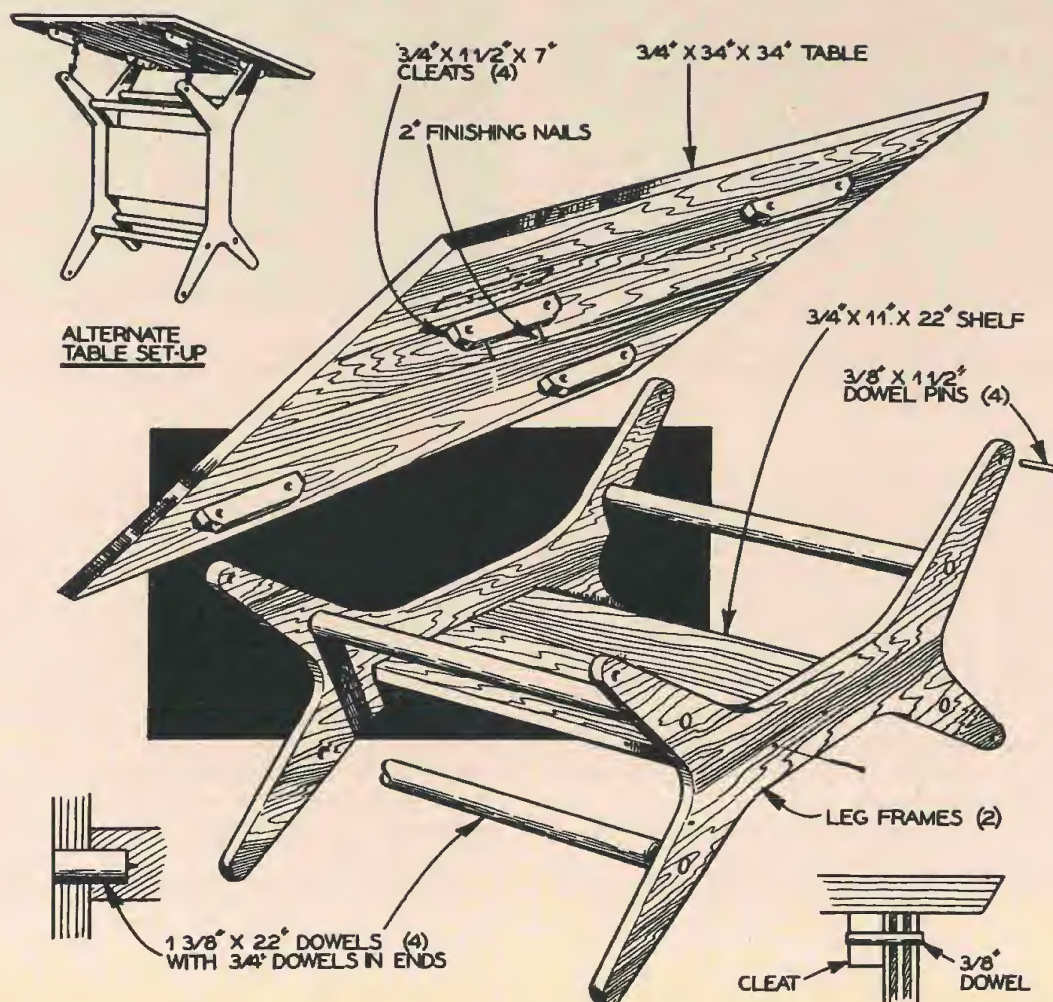
To bring top to level of dining or card table, remove dowel pins, turn base, engage top at new position.

Photos by Bill Jackson

YOU'LL be able, quite literally, to turn the tables on yourself with this ingenious design. In its low position, it's a commodious coffee table with a built-in magazine shelf. A simple shift of the base to the upright position converts it instantly into a dinette or card table 30 inches high. The design of the base is responsible for the versatility of this unit. The table top, a respectable 34 inches square, is attached to the base with four $\frac{3}{8}$ -inch-diameter dowel pins, which are engaged by four cleats nailed to the underside of the top. The cleats each have two holes spaced at intervals that accommodate the top when positioned at either level.



The 7-inch cleats, which are glued and nailed to the underside of the table, each have two 3/8-inch holes spaced so that they will line up with holes in the legs when the table is placed at either position.





BILL OF MATERIALS

Note: All lumber, unless otherwise specified, is $\frac{3}{4}$ " plywood.

1 Table Top 34"x34"
 2 Leg Frames cut to size indicated.
 1 Magazine Shelf 11"x22"
 4 Cleats $1\frac{1}{2}$ "x7"
 4 Dowels, $1\frac{3}{8}$ " $23\frac{1}{2}$ " total length
 4 Dowels, $\frac{3}{8}$ " 3"
 2" Finishing Nails 12
 Glue



Place one side on floor and insert dowel tenons. Shelf position has been marked on the side piece.



Attach opposite side. Be sure that your marks for shelf position are facing in right direction.

First cut all elements to size, with the exception of the magazine shelf. All cuts must be on the nose for this project, or your table will not function properly. Notice that the long dowels are 22 inches between shoulders; adding another $1\frac{1}{2}$ inches for the thickness of your $\frac{3}{4}$ -inch sides, with tenons they should total $23\frac{1}{2}$ inches in length. Here again, as in Project 6, the bored-end method of tenoning is shown, but refer to pages 8 and 9 for an easier way to obtain this effect.

After cutting the sides, top, large dowels, and cleats to shape, start boring the holes where indicated. The cleat holes and the

holes through the legs are $\frac{3}{8}$ inch in diameter. Note that only *three* legs require boring on each side. The four holes for the large dowels will depend on the exact size of your tenon. If you use $1\frac{3}{8}$ -inch dowels, $\frac{3}{4}$ -inch tenons and holes are fine. Before assembly, pencil in the position of the shelf on the inside surfaces of both sides. This will make it easier to install when you're ready for it.

Assembly: Put one side element on the floor; be sure that the surface marked for the shelf faces up. Apply glue to the dowel tenons and the holes, and insert the dowels in place. Position the opposite side and en-



Above: Shelf is now placed inside the indicated area of the lower piece and swung into position. It might be wise not to cut the shelf to length until sides are assembled with dowels. Above right: Attach the shelf by nailing through both sides.



gage the free dowel tenons. Two things must be watched when adding the second side; first, the penciled position of the shelf must be facing down; secondly, your holes for $\frac{3}{8}$ -inch dowels in the legs must line up correctly; that is, both legs that have *not* been bored for the cleat holes should be in the same corresponding position.

Now determine the exact length of your shelf and cut it to size. Glue the ends and place it within the penciled area of the element on the floor, then swing it up so that it meets the lines of the upper member. Nail it through both side elements with 2-inch finishing nails.

You are now ready to attach the four cleats. Place your table top on the floor so that the underside is up. Center the completed leg assembly, *in its horizontal or low position*, on the top panel. Now place one cleat against the *inside* of one table leg so that the outer hole of the cleat coincides with the hole in the leg. Place one of your $\frac{3}{8}$ -inch dowels through both lined-up holes (without glue) and mark the position of the cleat with a pencil. Repeat this operation for the three remaining cleats, then nail and glue them permanently. The $\frac{3}{8}$ -inch dowels are not glued, because if they were you obviously couldn't change the position of the top. These dowel pins will achieve a very firm press-fit, which you will find quite sufficient.

This completes construction. Make sure your table works properly at both levels, then sand it well and finish as desired. •



Invert table top on floor; place leg assembly on it to double-check accuracy of cleat positions.



After attaching all cleats, make sure that they line up at both levels before applying your finish.

project 8

Adjustable shelf (holes for supports are visible in right side) enables you to adapt unit to specific requirements.

Photo by William F. Howland

storage cabinet

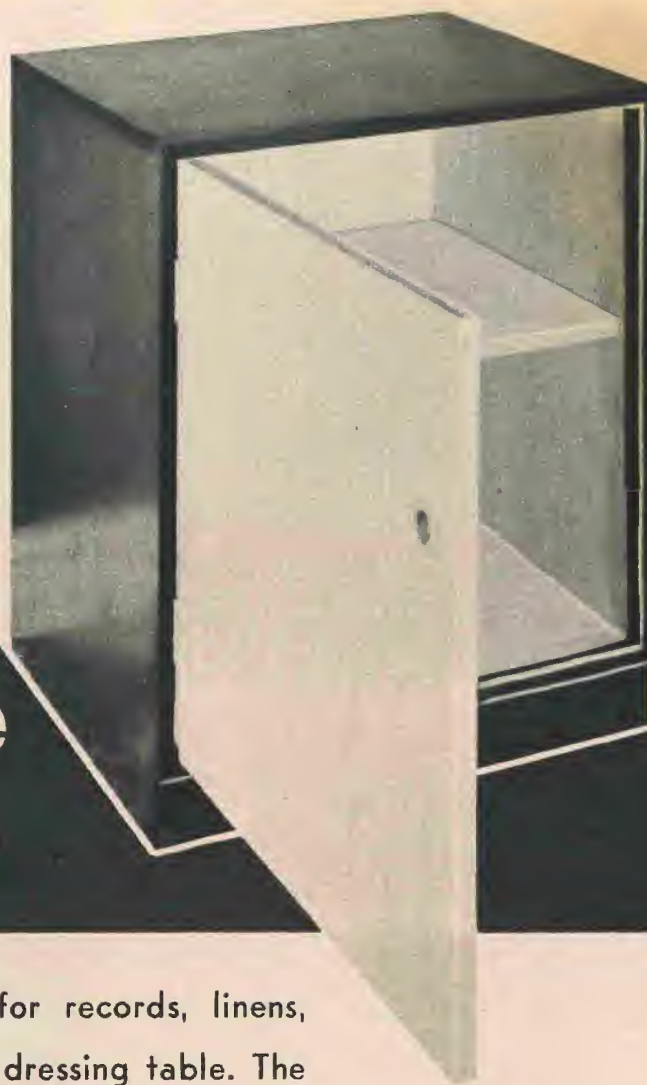
Use this 29-inch-high piece for records, linens, or as the base for a desk or dressing table. The hinges may be hung on either side to fit your needs.

THIS commodious unit is perfect for storing linens, phonograph records, or can serve as a spare storage chest that will be a welcome addition to any household. Also, its 29-inch height makes it ideal for use as a desk or dressing table base. One adjustable shelf is indicated, but you can add more at whatever intervals you desire if you have a specific storage problem in mind. The hinged door will keep all objects within clean and dust-free.

Assembly: First cut all elements to the sizes indicated in the bill of materials. Cut your $1\frac{1}{4}$ x3-inch recesses in the front bottom corners of the side members. Lay out and bore the $\frac{1}{4}$ -inch holes for your metal shelf supports. Be sure not to make these holes more than $\frac{1}{2}$ inch deep, or they will penetrate the sides. You can rig up a little depth gauge by winding some adhesive tape around your bit so that the lower edge of the tape is $\frac{1}{2}$ inch from the bit end.

After all your holes are bored, attach the top to both sides with 2-inch finishing nails, and then install the 3x24-inch base front in its recesses. The 3x22 $\frac{1}{2}$ -inch base rear is next attached in position between the side pieces with 2-inch finishing nails.

At this stage, the 20x22 $\frac{1}{2}$ -inch bottom panel is added. It is



FRICION CATCH SECURED
BEFORE CLOSING BACK

MOVABLE
SHELF
BRACKETS

BRASS DOOR
PULL

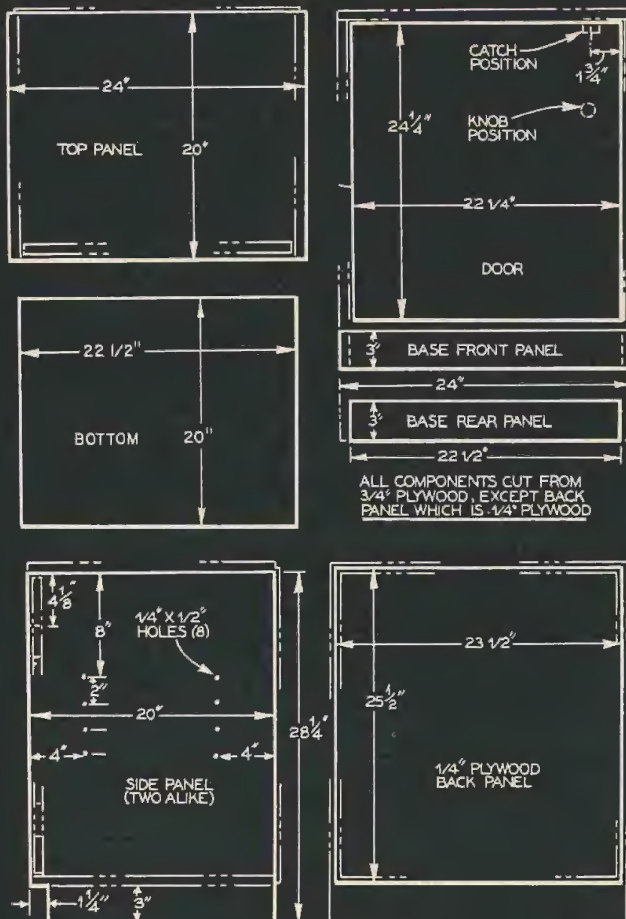
2" FINISHING NAILS

Right: Notice direction of the grain in sides, top, and door: cut your plywood accordingly.

1 3/4" X 2 1/2" BRASS
HINGES (2)
(NOT MORTISED)

REAR BASE PANEL

FRONT BASE PANEL



Left: All elements, with the exception of the 18 1/2x22-inch shelf, are indicated in this diagram.



BILL OF MATERIALS

Note: All lumber, unless otherwise specified, is $\frac{3}{4}$ " plywood.

2 Sides	20"x28 $\frac{1}{4}$ "
1 Bottom	20"x22 $\frac{1}{2}$ "
1 Top	20"x24"
1 Base Front	3"x24"
1 Base Rear	3"x22 $\frac{1}{2}$ "
1 Shelf	18 $\frac{1}{2}$ "x22"
1 Door	22 $\frac{1}{4}$ "x24 $\frac{1}{4}$ "
1 Back ($\frac{1}{4}$ " plywood)	23 $\frac{1}{2}$ "x25 $\frac{1}{2}$ "
1 Door Handle, pine or hardwood stock	$\frac{3}{4}$ "x $\frac{3}{4}$ "x4"
2 Wood Screws for Handle	1 $\frac{1}{4}$ " No. 6
2" Finishing Nails	1 lb.
2 Butt Hinges	1 $\frac{3}{4}$ "x2 $\frac{1}{2}$ "
12 or 8 Flathead Wood Screws for Hinges (depending on number of holes per hinge)	$\frac{1}{2}$ " No. 7
1 Friction Catch with screws	
4 Shelf Supports	
1 $\frac{1}{4}$ " Wire Brads	$\frac{1}{4}$ lb.



Before boring holes for supports, make gauge by wrapping adhesive tape $\frac{1}{2}$ inch from end of drill.



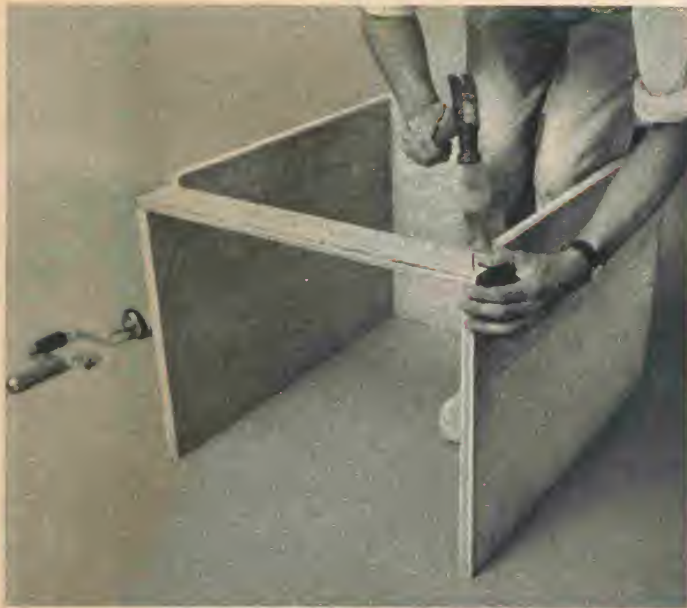
You can save time by marking the positions of shelf supports on both sides in one operation.



Three levels at 2-inch intervals are sufficient. As soon as the tape touches your wood, withdraw bit.



Now attach top to sides with 2-inch finishing nails; remember to face side recesses correctly.



Install the 3x24-inch base front so that it fits flush with the outside edges of both side panels.



The 3x22½-inch base rear is now inserted between the sides, is attached by nailing through sides.



Bottom panel is now lowered into place, and is nailed first to both bases, then through the sides.



Now you're ready for the door, which may be hung on either side. Screw hinges 4 inches from ends.

nailed into both bottom bases and through both sides. This completes the basic cabinet frame.

The door comes next. If you've ever tried to hang any type of door, you're aware that it can be a fairly tricky business. In this project, however, the major pitfall—the painstaking job of cutting accurate mortises—has been dispensed with. Your 2½-inch hinges are merely butt-screwed to the edge of your door. Mark off both positions for the screws on the door and screw them

down, after boring pilot holes to prevent splitting your wood. When your screws have been attached to the door, lay the cabinet sideways on the floor as shown on next page. In this manner, you can lay the door flat, and it will be much easier to attach to the cabinet. Before screwing into the cabinet, make sure that you have equal clearances at both the top and bottom edges of the door.

Drive only one screw into each hinge, then turn the cabinet upright and try the



Above: After hinges are screwed to door, turn cabinet on its side. Lay door on piece of plywood (use shelf) to raise it to proper level for attachment.



Above right: Position door so that both ends are about $\frac{1}{8}$ inch from the top and bottom of the frame. Bore pilot holes, then insert your screws.



Right: Friction catch is now added. Attach prong element so that it is flush with top of the door. It can be placed from $1\frac{3}{4}$ to 4 inches from edge.

door to see what kind of a fit you obtained. If it swings freely without striking any of the edges, attach the remaining screws. If it does hit, simply take out your two screws and make the necessary adjustments.

You are now ready to attach the friction catch to the upper inside surface of the door. Since these units are made by many manufacturers and vary somewhat in size, it will be impossible to give precise dimensions for placement. In any case, however, the prong element should be screwed to the door so that it is flush with the top. Now close the door, and working from the back of the cabinet, which is inverted, attach the spring part so that it actually engages the

prong. Pull the door in what will be its normally closed position. On the underside of the top panel pencil in the positions of the screw holes for the spring unit, and attach it.

You can now attach your knob or wooden door handle. Many attractive metal knobs or pulls are now available, and you may want to use one of these instead of the wooden unit specified in the bill of materials. The back is now attached with $1\frac{1}{4}$ -inch wire brads.

Sink all nailheads about $\frac{1}{8}$ inch below the surface of the wood, and cover all holes with Plastic Wood. Sand the entire piece, especially edges, and finish your cabinet. •



Snap on the spring element so that it is fully engaged. Screw-mounting holes face cabinet top.



Working through the open back of the cabinet, pull door closed and pencil in screw positions.

Open the door, bore appropriate pilot holes, and fasten the spring element with the screws provided.



The $\frac{1}{4}$ -inch plywood or Masonite back, attached with $1\frac{1}{4}$ -inch wire brads, is final assembly phase.

living room chair

You can really relax in one of these low-slung chairs. Build several to form a sectional group.

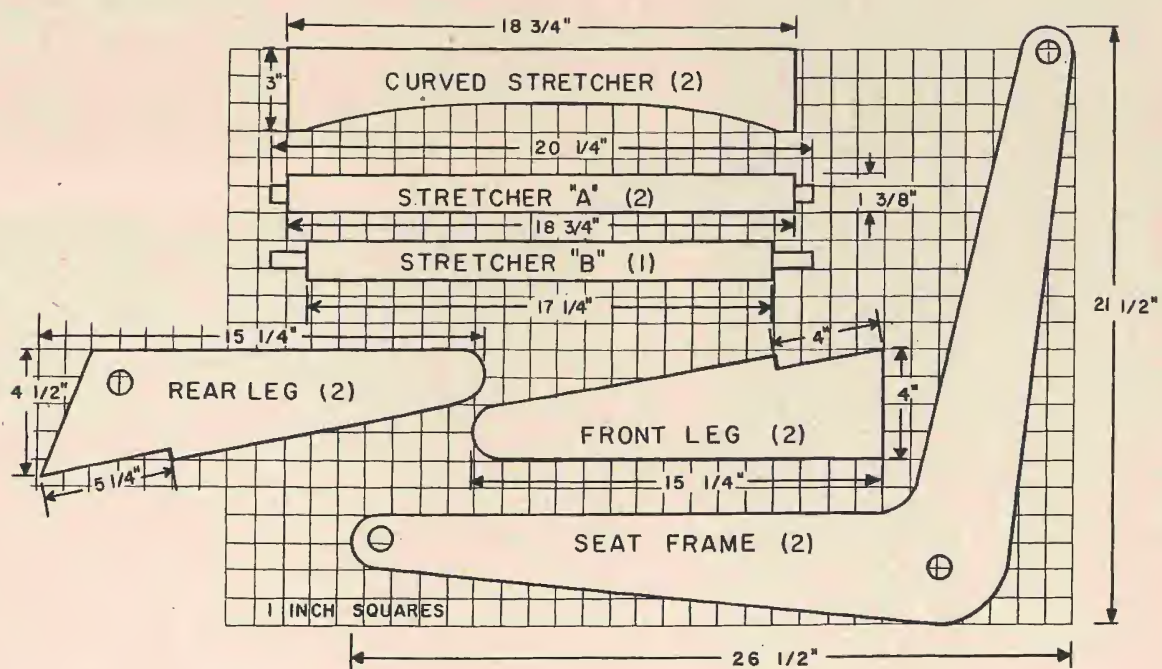
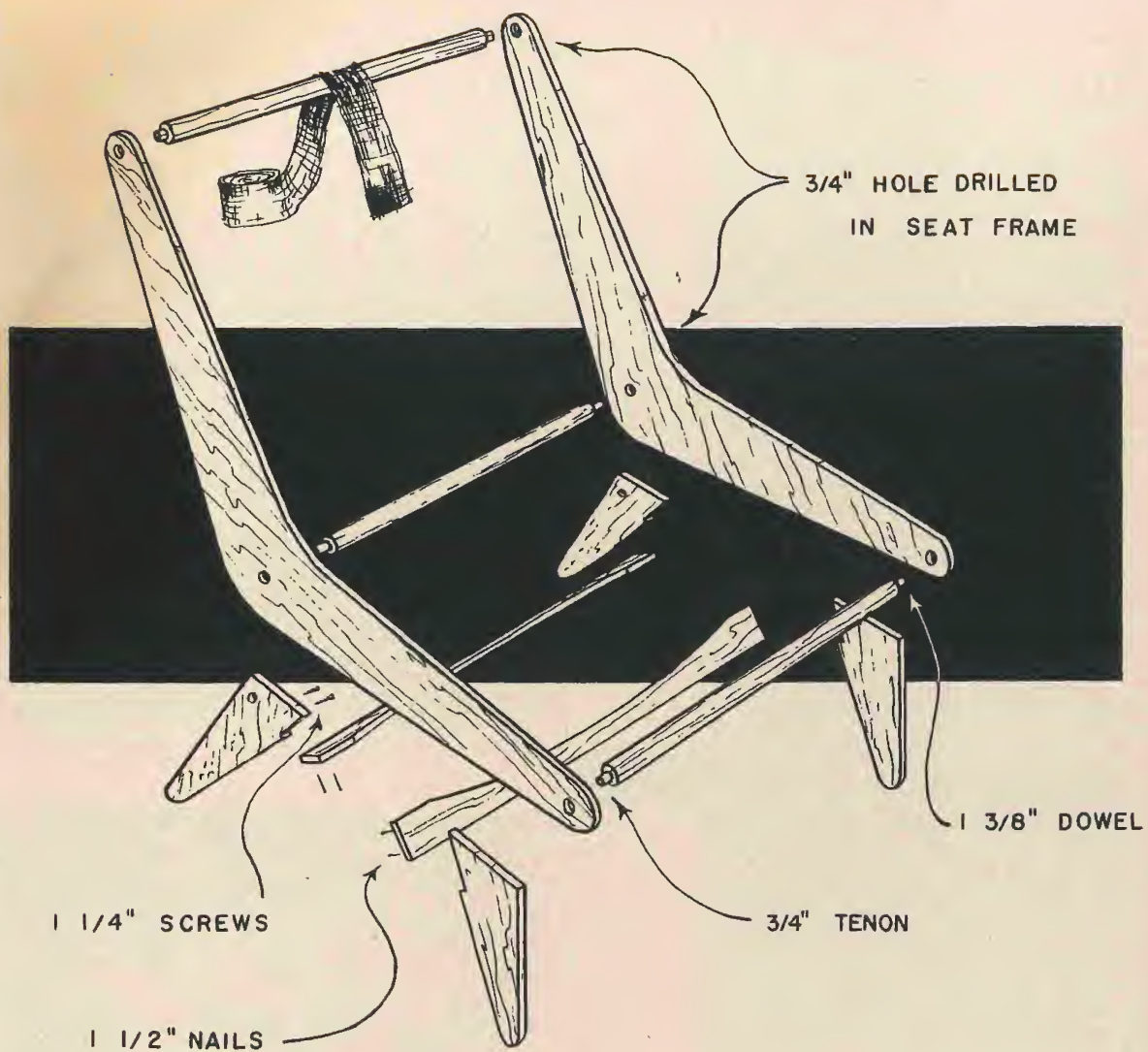


Photo by Midori

LOW, wide and handsome are the bywords for this comfortable chair that offers extra dividends: two or three of them may be placed side by side to form a handsome sectional grouping.

Begin by cutting all parts to size, with the exception of the two curved stretchers. Leave these until you assemble the sides with the dowel stretchers. In this way, if your measurements are off slightly, you can then cut the curved pieces to exact size. Notice the tenons on the ends of dowel stretcher B are longer than the tenons on A. This is so because B's tenons must go through the two thicknesses of plywood of both sides and rear legs, while the A stretchers go only through the sides.

After cutting the elements, make your dowel tenons and bore holes, where indicated, to accept them. Make sure that these holes are accurately placed and that the tenons fit properly. Note that screws are used to attach the legs, so bore pilot



BILL OF MATERIALS

Note: All lumber, unless otherwise specified, is $\frac{3}{4}$ " plywood.

2 Seat Frames, with
 $\frac{3}{4}$ " holes cut as shown
 2 Front Legs cut as shown
 2 Rear Legs, with
 $\frac{3}{4}$ " holes cut as shown
 2 Curved Stretchers 3"x18 $\frac{3}{4}$ "
 2 Dowel Stretchers "A" . . 20 $\frac{1}{4}$ " overall
 1 Dowel Stretcher "B" . . 20 $\frac{1}{4}$ " overall
 22 Flathead Wood
 Screws 1 $\frac{1}{4}$ " No. 8
 1 $\frac{1}{2}$ " Finishing Nails 8
 Glue
 No. 6 Upholstery Tacks 1 Box
 2" Webbing 25 Yards



1. First attach rear leg. Dowel stretcher B, with 1 $\frac{1}{2}$ -inch tenons on each end, is inserted as shown, without glue, to line up the leg and the seat frame.



2. Now attach front leg. Prebore and countersink all pilot holes before assembly. Soap rubbed along the screw threads makes them easier to drive.





3. Using the completed side as a template, lay other seat frame over it to find leg position.



4. Here again, dowel stretcher B is inserted without glue to line up elements for opposite side.

holes and countersinks where necessary.

Assembly: Work with one side at a time. first screwing on the rear leg. To position the rear leg, place it on the side member so that its tenon hole is over the tenon hole in the side. Insert stretcher B through both holes, without glue, as shown in the photo. This will line up both units. Once the position is determined, screw down your rear leg. Now attach the front leg. You now have one side unit completed.

To assemble the opposite side, lay the first completed side flat on the floor with the legs down. Position the second side piece over it and then place the second rear leg on top of it. Reinsert stretcher B, as you did before, through the rear leg and the side piece; attach the rear leg. Use this method to get position of the front leg, too. Both side units are now completed.

Apply glue to one tenon of all three dowel stretchers, and to their corresponding holes. Insert the dowels into the holes, remembering that stretcher B is for the rear legs. Now apply glue to the opposite tenons and holes and engage the other side assembly.

Glue and nail the curved stretchers into their respective leg recesses, making sure that the curved edges face the seat. This completes actual construction. To obtain a

5. Line up front leg in the same manner. Legs should be on inside surfaces of both seat frames.





6. After gluing dowel tenons into holes of one side, engage holes of the opposite side.

strong chair, you can improvise a good clamping system that will hold the chair in a rigid and accurate position until the glue sets. Tie the frame as indicated in the photo. You can use tools or wooden coat hangers as your twisting devices. Wipe off excess glue, and allow at least eight hours for all glue to dry.

After the glue has set, sand the entire frame and finish as desired. To make sure that the dowels do not loosen, drive a single finishing nail into the end of each shoulder, as shown in photo 10.

Webbing: You will need seven lengthwise strips of 47-inch-long webbing, and fifteen transverse strips 32 inches long. First distribute eight of the short strips evenly over the seat area. Tack one end of each strip to the lower edge of the frame,

folding the ends double for extra strength. Now distribute the remaining eight transverse strips over the back and tack as before. Stretch the webbing as tightly as possible, and cut off the excess, remembering to account for double ends.

Now for the long strips: evenly space, double the ends and tack the seven strips to the underside of the *top* dowel stretcher. Interweave the webbing with the side strips and tack the doubled ends to the bottom stretcher. Do not pull these long strips too tightly, for this will create an uncomfortable bulge. New webbing may stretch; to tighten, restretch the cross strips on the seat only. For a photo story on this entire procedure, refer to the chapter entitled *Working with Webbing*, which appears on pages 124-127. •



7. Install front curved stretcher in the leg recesses. Drive nails part way before assembling.



8. Rear stretcher is installed at this stage. Cut-out edges of both stretchers face the seat area.

9. To assure good glue joints, rig up a simple clamping device, using stout cord and your tools.



10. While chair is clamped, drive nail into each dowel as insurance against eventual loosening.



Photo by Bill Jackson

nested tables

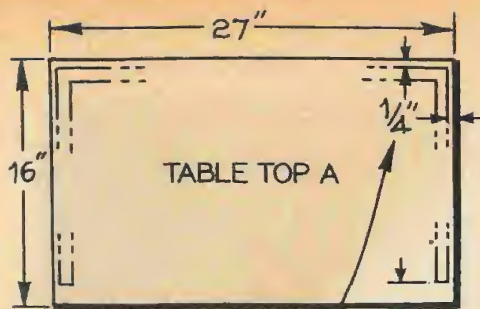
Occupying a minimum of floor space in your recreation room or living area, these are ideal for every hampered hostess.

IF you're under the impression that building nested units is a job that can be performed only by a professional cabinetmaker, you're dead wrong, and these tables prove it. Each table utilizes only four elements: one rear leg unit, two side legs, and a top. The stacking principle is incorporated by leaving open and unobstructed the area between both front legs.

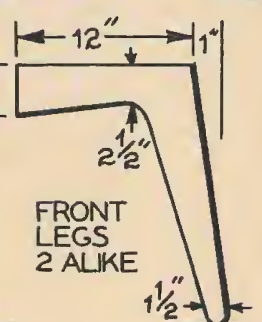
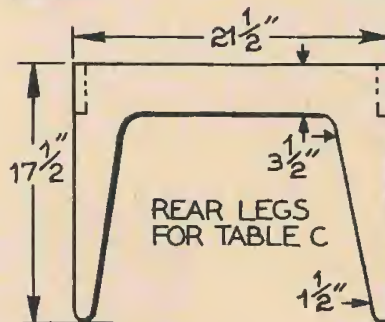
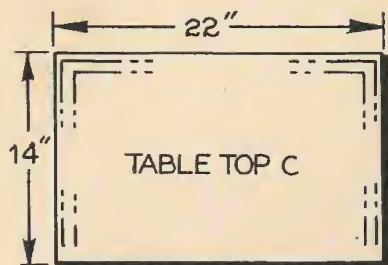
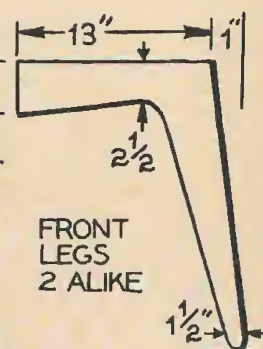
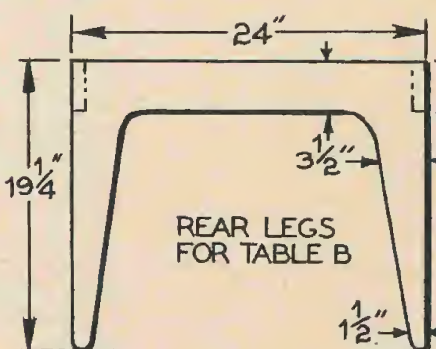
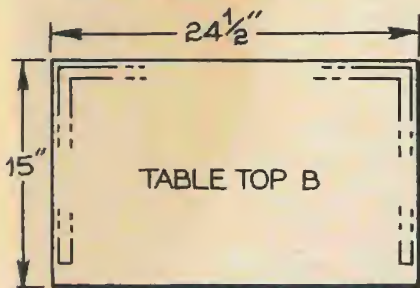
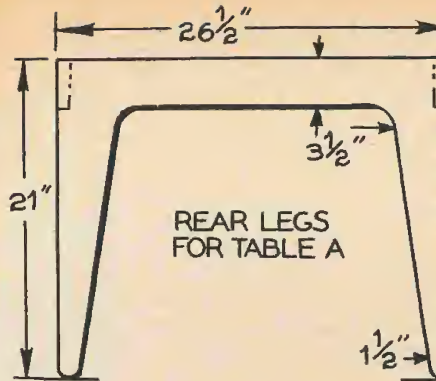
You can give your tables a natural finish, or paint them in contrasting colors or in various shades of the same color. Thus, in either their stacked position or while actually being used, they will be harmonious additions to any room.

Construction is simplicity itself, and after you've assembled one table, you repeat the procedure for the other two. Let's build one.

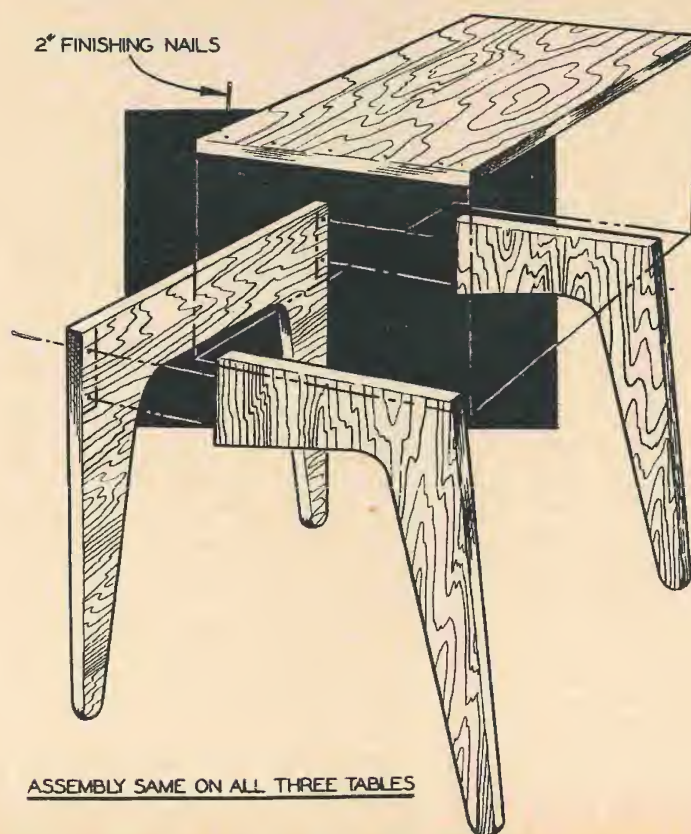
After the pieces are cut to size, drive 2-inch finishing nails (two or three on each side) part way through the rear leg unit. These will engage both front legs. This method of nailing will enable you to place your nails exactly where they belong, and obviates the possibility of



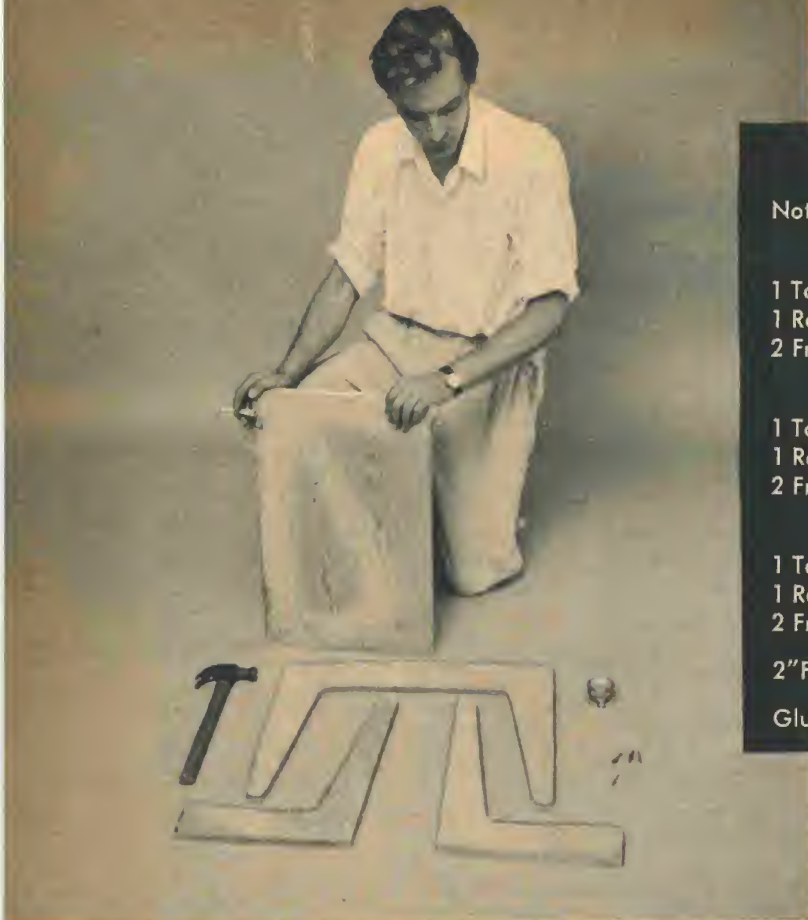
POSITION LEGS
SAME ON ALL TABLES



ALL COMPONENTS FOR NEST OF TABLES CUT FROM 3/4" PLYWOOD



ASSEMBLY SAME ON ALL THREE TABLES



BILL OF MATERIALS

Note: All lumber is $\frac{3}{4}$ " plywood.

TYPE A

1 Top 16"x27"
 1 Rear Leg Unit cut as shown
 2 Front Legs cut as shown

TYPE B

1 Top 15"x24½"
 1 Rear Leg Unit cut as shown
 2 Front Legs cut as shown

TYPE C

1 Top 14"x22"
 1 Rear Leg Unit cut as shown
 2 Front Legs cut as shown

2" Finishing Nails for Three Tables . . . ½ lb.

Glue

After cutting, start nails through ends of rear leg unit. Place front legs as shown to determine position of nails.



Two or three 2-inch finishing nails can be used at each end. Glue is now applied to all surfaces that are to be joined.





Drive nails into the legs; hammer lightly to avoid marring the wood. Nails are sunk with a punch.



Apply glue to the top edges of the completed frame. You'll do a neater job with a small brush.

Position the top panel so that it extends over the rear leg units and both front legs by $\frac{1}{4}$ inch.

Holding the top firmly in place, nail it down. This completes one table. Repeat for other two.



splitting or missing the legs. Next apply glue to the joining surfaces and attach both legs, driving through the rear leg unit, as shown in the sketch and photos. Once the legs and rear leg unit are firmly nailed together, you have your frame completed.

All that remains now is to add the top, which is nailed to both legs and to the rear leg unit. The top extends over the rear leg unit and front legs by $\frac{1}{4}$ inch. Believe it or not, that completes your table! You can now tackle the other two.

Countersunk wood screws may be used

for this project instead of nails, but the latter are sufficient. If nails are used, sink all nailheads about $\frac{1}{8}$ inch below the surface of the wood. Fill holes with Plastic Wood, and sand flush. If you used screws, fill the countersunk holes similarly, and sand your wood putty flush with the surfaces. Go over your units with sandpaper, finish as desired. Refer to the chapter entitled *Finishing Your Furniture*, pages 128-137, for detailed information and photographs concerning various types of finishing agents and methods of application. •

Two-door cabinet is 48 inches long, does not contain the upright partition present in larger unit shown opposite.

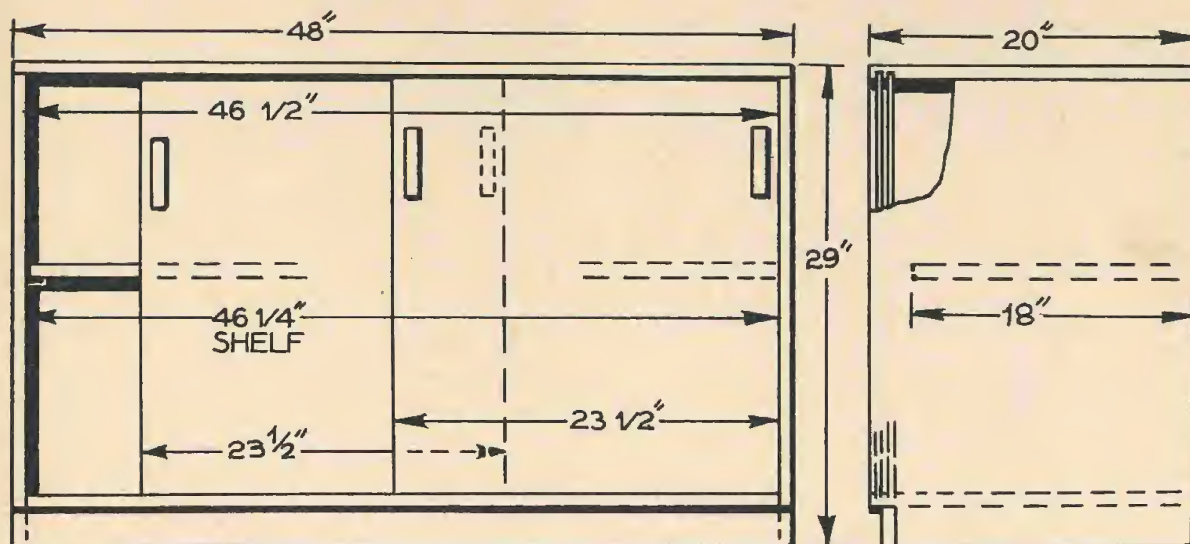


sliding-door cabinets

Solve your storage problems by building one of these handsome cabinets with adjustable shelves. Two sizes can be constructed from these plans.

DESIGNED to solve your troublesome storage problems, these commodious units will easily accommodate linen, clothing, china, phonograph records, or what have you. Although the basic styles are similar, the two-door unit is 48 inches long, the three-door unit 72 inches long. The main difference in construction and assembly is the inclusion of the upright partition in the latter.

The photos of assembling technique on the following pages are concerned with the smaller cabinet, but we shall treat in the text any departures necessary for completion of the 72-inch cabinet.

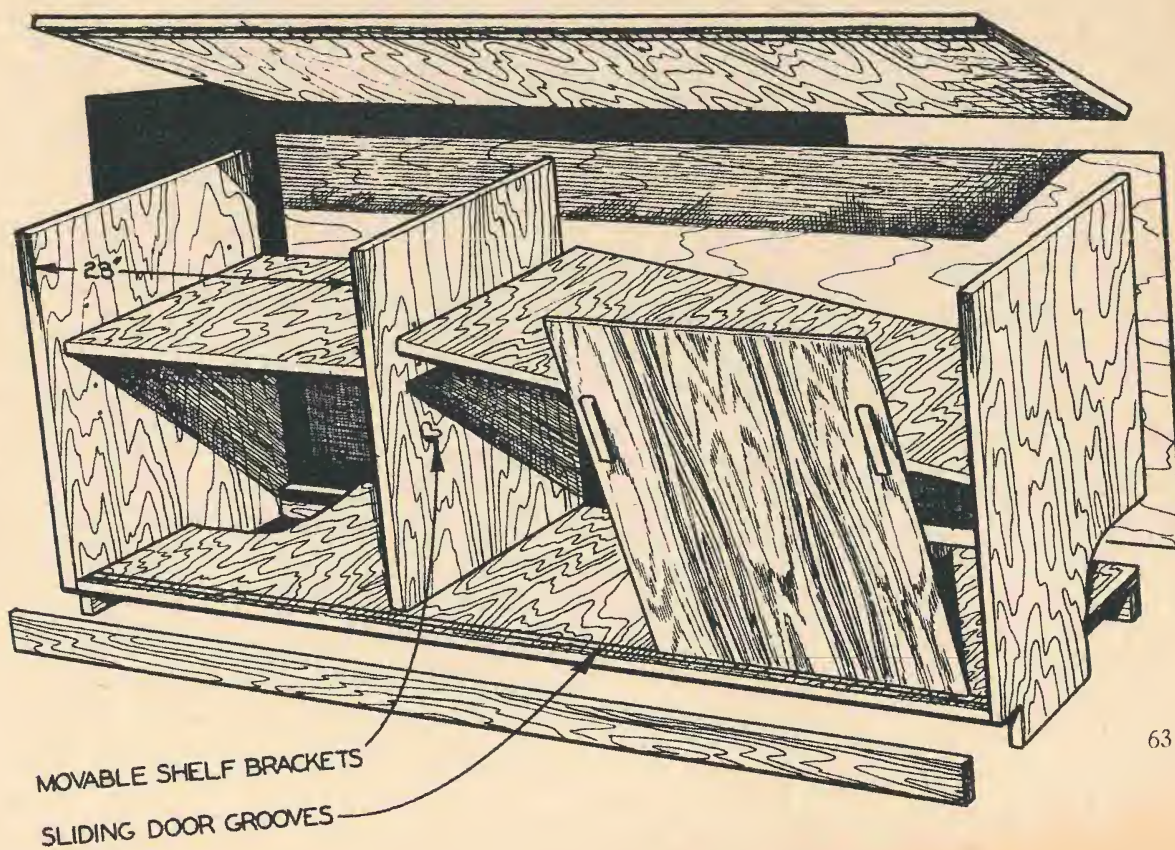


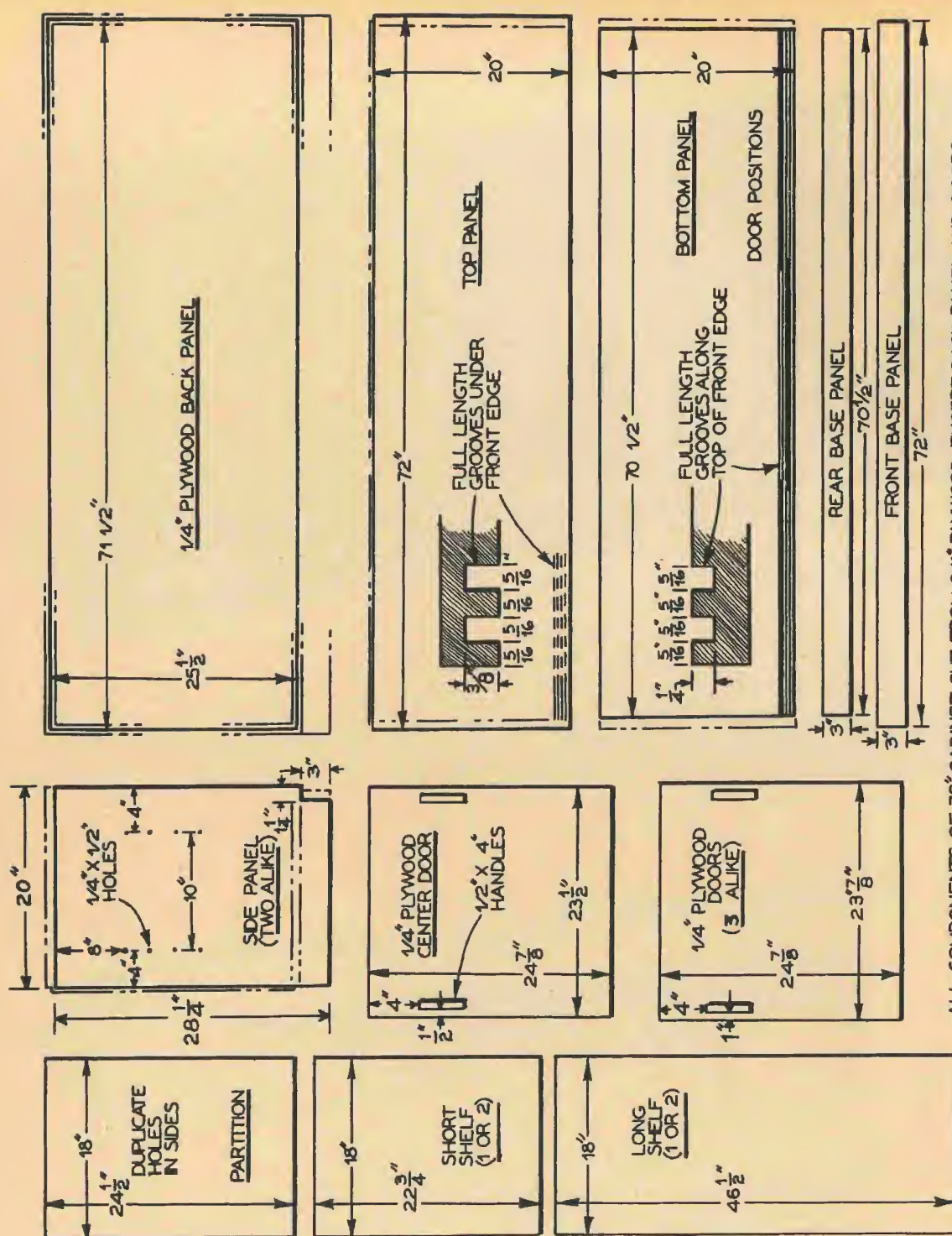
ALTERNATE CABINET IS 48" LONG WITH ONLY TWO SLIDING DOORS



Photos by Bill Jackson

Above: Three-door cabinet is 72 inches long. The upright partition, which makes this unit extremely flexible, is visible in this view. Notice positions of door pulls. Below: Exploded diagram indicates method of assembly. All component parts and dimensions for this piece appear in the sketch on the next page.





ALL COMPONENTS OF 72" CABINET CUT FROM 3/4" PLYWOOD EXCEPT BACK PANEL AND DOORS

Since this attractive unit will be an important addition to your home, give a little thought to your materials. A good idea is to use contrasting plywoods—for example, birch or gum for the cabinet frame and 1/4-inch walnut doors. Or you can paint the frame and finish your walnut doors natural.

After getting your plywood, cut your pieces to size. Be sure that the grain in the sides and top of your frame runs in the

same direction, and remember that the grain in the doors should run vertically.

After cutting all of your elements to size, cut the grooves in your top and bottom panels for the sliding doors. Be sure, however, to make the grooves in the top piece deeper than those on the bottom—3/8" and 1/4 inch respectively. The purpose of this is to enable you to install the sliding doors after the rest of the frame has been com-

BILL OF MATERIALS

72-INCH UNIT

Of $\frac{3}{4}$ " plywood:

1 Top	20"x72"
2 Sides	20"x28 $\frac{1}{4}$ "
1 Bottom	20"x70 $\frac{1}{2}$ "
1 Upright Partition	18"x24 $\frac{1}{2}$ "
1 or 2 Short Shelves	18"x22 $\frac{3}{4}$ "
1 or 2 Long Shelves	18"x46 $\frac{1}{2}$ "
1 Front Base	3"x72"
1 Rear Base	3"x70 $\frac{1}{2}$ "

Of $\frac{1}{4}$ " plywood:

1 Back	25 $\frac{1}{2}$ "x71 $\frac{1}{2}$ "
3 Doors	23 $\frac{7}{8}$ "x24 $\frac{7}{8}$ "
6 Door Handles	$\frac{1}{2}$ "x4"

Other materials:

2" Finishing Nails	1 lb.
1 $\frac{1}{4}$ " Wire Brads	$\frac{1}{2}$ box
8 or 16 Shelf Brackets	$\frac{1}{4}$ "
Glue	

48-INCH UNIT

Of $\frac{3}{4}$ " plywood:

1 Top	20"x48"
2 Sides	20"x28 $\frac{1}{4}$ "
1 Bottom	20"x46 $\frac{1}{2}$ "
1 or 2 Long Shelves	18"x46 $\frac{1}{4}$ "
1 Front Base	3"x48"
1 Rear Base	3"x46 $\frac{1}{2}$ "

Of $\frac{1}{4}$ " plywood:

1 Back	25 $\frac{1}{2}$ "x47 $\frac{1}{2}$ "
2 Doors	23 $\frac{1}{2}$ "x24 $\frac{7}{8}$ "
4 Door Handles	$\frac{1}{2}$ "x4"

Other materials:

2" Finishing Nails	1 lb.
1 $\frac{1}{4}$ " Wire Brads	$\frac{1}{2}$ box
4 or 8 Shelf Brackets	$\frac{1}{4}$ "
Glue	



1. Following photos concern assembly of 48-inch unit. After cutting recesses in sides and boring shelf support holes, attach top panel to sides.



2. The 3x48-inch front base is now installed in recesses. Note grooves for doors in the top panel.



3. The rear base, which measures 3x46½ inches, is positioned and nailed through both side pieces.

pleted. (This procedure is described later.)

If you cut these grooves in your own shop, you will probably be able to make "blind" grooves—that is, the cuts won't extend to the very ends of your panels. If a lumber yard does the cutting, they'll probably run the pieces straight through, which will leave you with two little cutouts at each upper end of your cabinet. However, you can plug these with stock lumber cut to exact size and glued in place.

Now cut out the 1¼x3-inch recess in the bottom front corners of the side panels. Drill ¼-inch holes for shelf supports into

the inside surfaces of the side members. Use utmost care not to drill holes deeper than ½ inch. Wrap a piece of masking or adhesive tape around the drill ½ inch from its end to guide you.

(If you're making the 72-inch unit, you'll have to bore ¼-inch shelf support holes all the way through the upright partition.)

Nail the top to the sides with 2-inch finishing nails, then attach the two 3-inch-high base pieces. You can now fit the bottom panel in place and nail it to both base pieces, then through both side panels.

(If you're making the 72-inch unit, now

4. Bottom panel is added. Be sure that it is placed so that its grooves face front of cabinet.

5. Your bottom panel is first attached to both of the base members with 2-inch finishing nails.





6. Bottom is now nailed through both side panels. Hammer very lightly to avoid marring your wood.



7. The $\frac{1}{4}$ -inch back may be used to square frame, if required. Attach it with $\frac{1}{4}$ -inch wire brads.

is the time to permanently install the upright partition. Nail it in place with 2-inch finishing nails, allowing 23 inches of clearance from either side you prefer. It is nailed through the top and bottom.)

Now put on your $\frac{1}{4}$ -inch plywood back with $1\frac{1}{4}$ -inch wire brads. If your cabinet is not exactly square at this point, you can bring it into position by applying the back carefully.

Glue handles to all doors. Position them so that they are 4 inches from the top and recessed one inch from each side.

Sink all nailheads into the wood about $\frac{1}{8}$

inch with a nail punch. Fill resulting holes with Plastic Wood. Sand all edges and finish as desired.

Before installing the doors, rub candle wax on their lower and upper edges to make them slide more easily. To put them into their grooves, engage the top edge of the door into the upper groove, and then let it fall into place in its bottom groove. For the 48-inch unit, insert one door into the outer groove and the other into the inner groove. For the 72-inch piece, insert the two end doors into the inner grooves and center door into outer grooves. •

8. To install door, lift into top groove. Push door gently forward, let it drop in bottom groove.

9. Test doors for mobility. The groove cutouts in top panel can be filled with pieces of scrap.



project 12



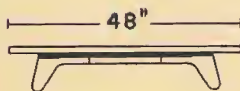
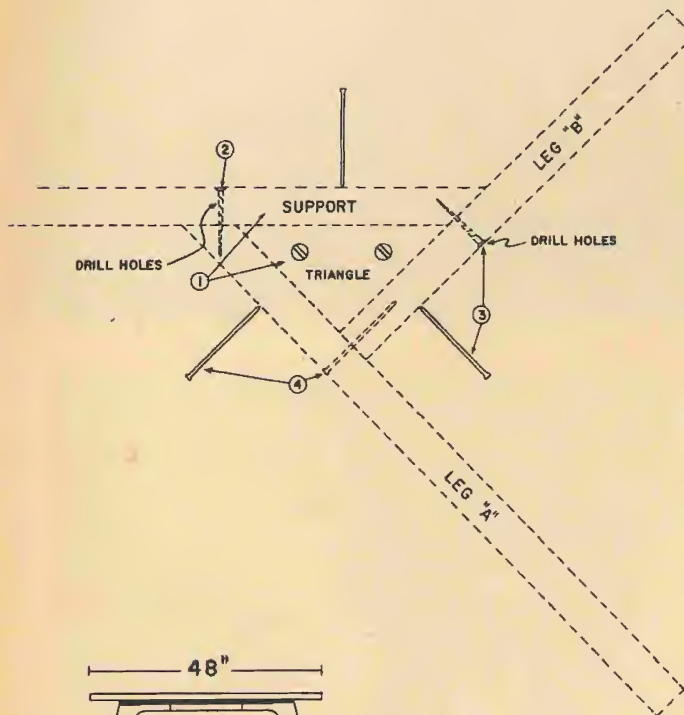
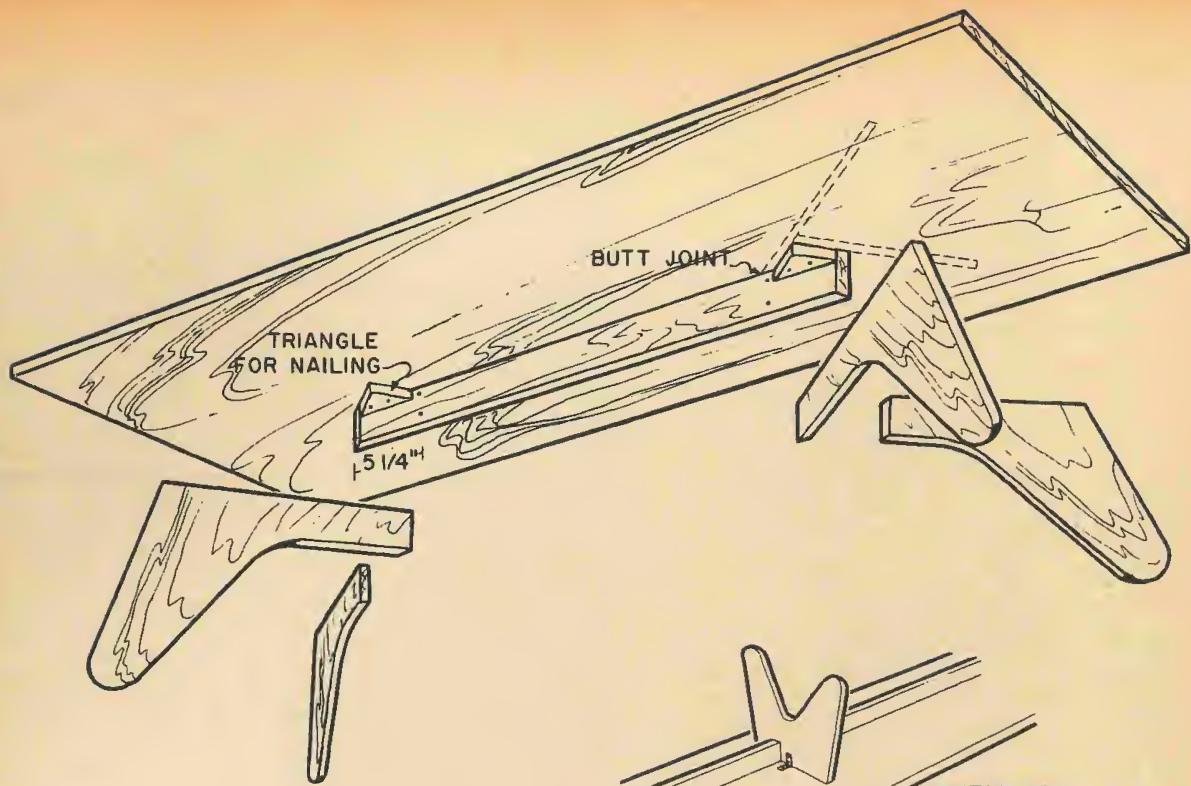
Photo by Bill Jackson

The 72-inch unit provides ample space for Cabinet (Project 8), also serves as coffee table and bench

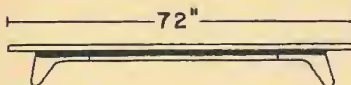
coffee table-bench-base

This sturdy, stable triple-purpose table can be made in four, six, or eight-foot lengths to perform a variety of space-saving applications.

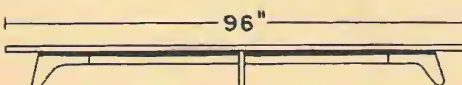
THIS triple-purpose piece can be used as a coffee table or as a base for any of the modular cabinets and chests included in this volume. It's especially adaptable for use in conjunction with the Bookcase (Project 3), Chest of Drawers (Project 5), Storage Cabinet (Project 8), and the Sliding-Door Cabinets (Project 11). (See the chapter entitled Modular Arrangements for a fuller treatment of matching these pieces.) In addition, this unit makes a beautiful bench—with or without foam rubber



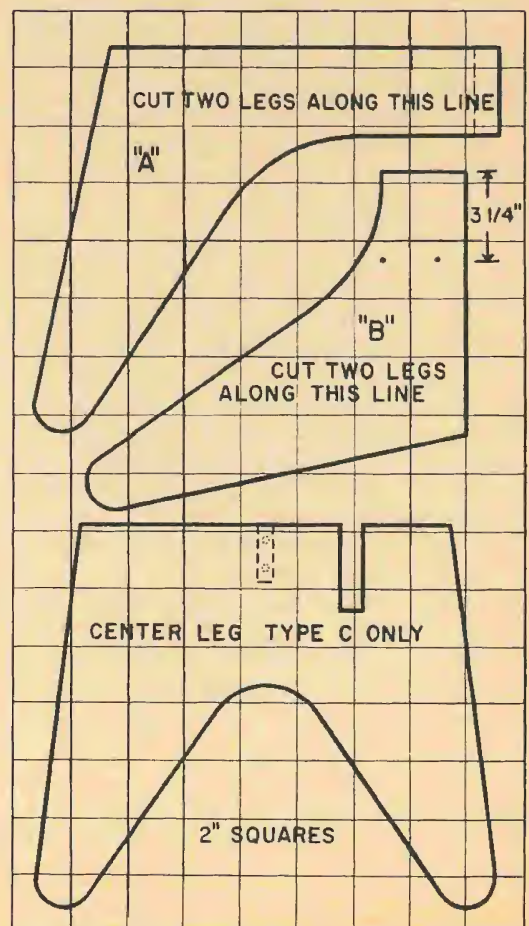
TYPE A ACCOMMODATES 2 CABINET UNITS



TYPE B ACCOMMODATES 3 CABINET UNITS



TYPE C ACCOMMODATES 4 CABINET UNITS





cushions, as shown in photo on page 68.

You can make this piece in one of three lengths: four, six, or eight feet, although the width remains the same in each instance: 20 inches. Construction procedure and assembly is the same for each, too, although Type C, the eight-foot table, requires an extra supporting leg.

Assembly: First cut all pieces to the sizes shown in the bill of materials. Although identical legs and triangles are used for each unit, note that the center supports increase proportionately with the length of the top panels. Cut 45-degree miters on your center support; refer to the diagram at the top of page 69 to see which way these miters face. Legs "A" also require 45-degree miters. Bore two $\frac{1}{8}$ -inch holes in each Leg "B" as indicated in the sketch, and also bore two sets of holes in the support for attaching it to Legs "A."

Now place your center support, triangles, and all four legs on the underside of the table, and pencil in their correct positions. Notice that the center support is not equi-

Begin assembling by attaching both triangles to underside of table top. Use screws rather than nails.

BILL OF MATERIALS

Note: All lumber is $\frac{3}{4}$ " plywood.

TYPE A

1 Top 20"x48"
2 Legs "A" cut as shown.
2 Legs "B" cut as shown.
2 Triangles 3"x3"x4 $\frac{1}{4}$ "
1 Center Support 3"x25 $\frac{3}{4}$ "
12 Wood Screws 1 $\frac{1}{4}$ " No. 8
2" Finishing Nails $\frac{1}{2}$ lb.
Glue

TYPE B

1 Top 20"x72"
2 Legs "A" cut as shown.
2 Legs "B" cut as shown.
2 Triangles 3"x3"x4 $\frac{1}{4}$ "
1 Center Support 3"x49 $\frac{3}{4}$ "
12 Wood Screws 1 $\frac{1}{4}$ " No. 8
2" Finishing Nails $\frac{1}{2}$ lb.
Glue

TYPE C

1 Top 20"x96"
2 Legs "A" cut as shown.
2 Legs "B" cut as shown.
2 Triangles 3"x3"x4 $\frac{1}{4}$ "
1 Center Support 3"x73 $\frac{3}{4}$ "
1 Center Leg cut as shown.
2 Angle Braces 2"
12 Wood Screws 1 $\frac{1}{4}$ " No. 8
8 Wood Screws $\frac{1}{2}$ " No. 6
2" Finishing Nails $\frac{1}{2}$ lb.
Glue



Bore two pilot holes $5\frac{1}{4}$ inches from each end of your center support before attaching this member.



Center support is butted against bottoms of triangles and glued in place. Note holes in Leg "B."



Leg "A" is now screwed to the center support through the prebored holes of the latter element.



Leg "B" is installed. It is screwed through its prebored holes into end miter of center support.



Finally, nail Leg "A" to the triangles and drive two nails through Leg "A" where it butts Leg "B."

If desired, drive a finishing nail into each leg through top. Sink heads, fill with Plastic Wood.



The 48-inch-long base is just the right length to accommodate the small Sliding-Door Cabinet (Project 11). Bases are exceptionally strong, well balanced.

Photo by Bill Jackson



distant from the edges of the top panel, but is $6\frac{1}{2}$ inches from one edge, and $12\frac{3}{4}$ inches from the other. Once this position is found, pencil it in, and put the triangles in place, both along the same edge of the center support. The apexes of the triangles should be pointing toward the wider area.

To facilitate assembly of the leg-support unit, the following numbers coincide to the encircled numbers in the middle sketch on page 69. (1) Glue and screw both triangles in place, and glue the center support in its proper position. (2) Attach Leg "A" to the support with two screws. (3) Glue and nail Leg "B" to the triangles with a single nail and drive two screws through the prebored holes of Leg "B" into the mitered end of the support. (4) Attach Leg "A" to the triangle with a single nail, then drive two nails through Leg "A" at the butt joint formed by both legs.

If you are making Type C, install the center leg by screwing an angle brace to each side of the middle leg. Glue and screw the leg in place.

If necessary you can make your table more rigid by inserting a single finishing nail into each leg, driving through the top panel.

Sink all nailheads with a punch. Leaving your table face down, place weights on the support assembly and legs, wipe off excess glue, and allow it to dry for several hours. When the glue has dried completely, remove the weights. Sand down the entire table, especially the edges, and finish as desired. Refer to the chapter entitled *Finishing Your Furniture* for tips on preparing your surfaces and information on various types of finishes that will enhance the ultimate appearance of every one of your projects. •

Used exclusively as a long, low coffee table, this unit was painted black to match the existing decor.



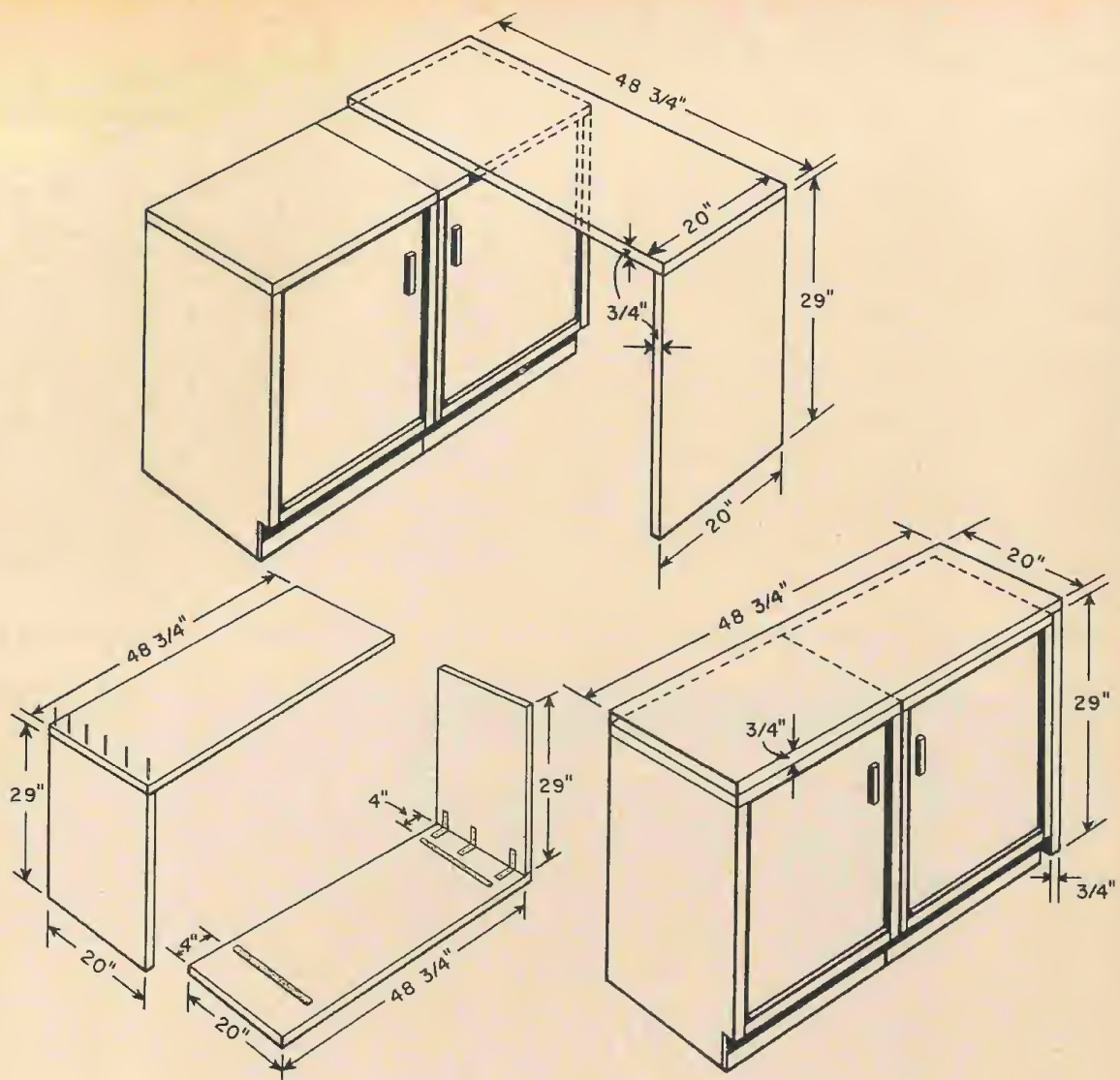
desk tops

Squeeze even more utility out of your cabinets by converting them into large-surfaced desks. Two basic desk top designs may be used.

TWO easily assembled types of desk tops will make the foregoing chest projects even more versatile than they already are. The L-shaped unit can be built in one of two lengths—48 $\frac{3}{4}$ or 72 $\frac{3}{4}$ inches, depending on the chest with which you want to use it. Note from the photograph below how you can convert the Storage Cabinet (Project 8) into an attractive knee-hole desk or dressing table merely by adding an L-shaped desk unit. The same effect can also be achieved with a Sliding-Door Cabinet (Project 11). An unusual advantage of this type of desk is that it can be “folded away” when not being used.

The other design, a flat utility top edged with molding, can be used to combine two chests like the Storage Cabinet. This may be made in





Above: L-shaped unit may be "folded away" when not in use. If you make a permanent desk, top can be 48 inches long. Below: End of long cabinet supports desk.



either 48 $\frac{3}{4}$ or 72 $\frac{3}{4}$ -inch overall lengths, depending on whether you want a solid front or a knee-hole unit.

L-Shaped Desk: After cutting your pieces of plywood to size, apply glue to the top edge of your side panel, or leg. Nail the side to the top, driving nails from the top into the side. Since you will later sink all nailheads with a punch, hammer lightly to prevent marring the wood.

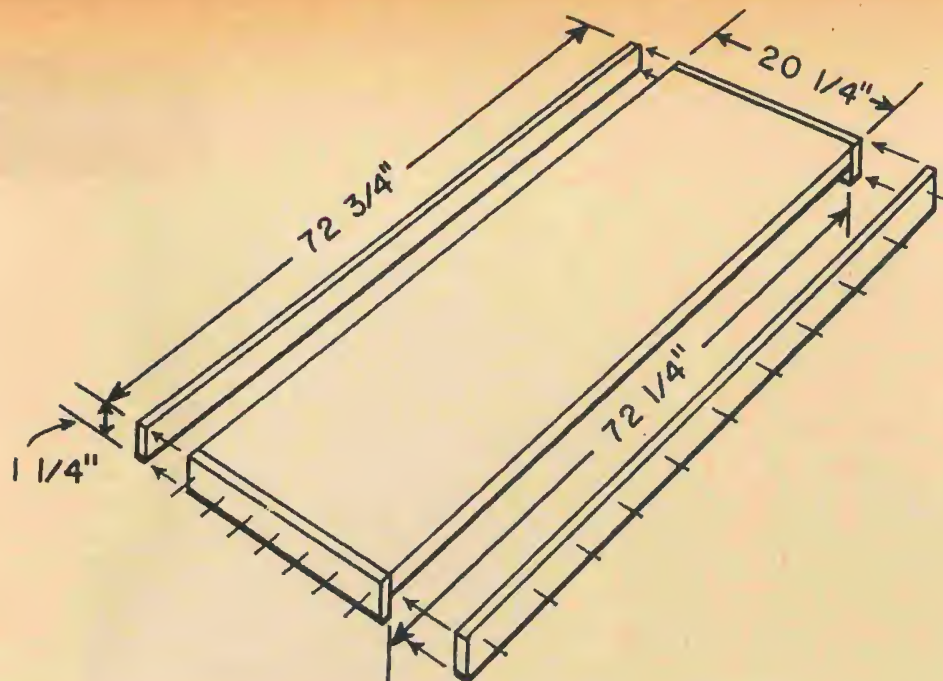
Lay the assembly on the floor and screw your metal corner braces into position with $\frac{1}{2}$ -inch No. 6 flathead wood screws. Now glue two felt or rubber strips to the underside of the top to prevent scratching the tops of your cabinets when the desk top is shifted about. (A leftover piece of cloth webbing from one of the chair projects will also serve.)

Sink all nailheads about $\frac{1}{8}$ inch with a nail punch. Fill all holes with Plastic Wood. Sand well, rounding all edges, and finish the top to complement its cabinet.

Flat Top: Cut all pieces to size shown in the bill of materials. Glue and nail with 1 $\frac{1}{4}$ -inch wire brads to the two short strips of pine molding to both short sides of your top panel. If necessary, saw off projecting ends so that these strips are flush with the sides. Now glue and nail the two remaining long strips of molding. Saw off the projecting ends and round the corners with sand paper. (See sketches on the opposite page for this procedure.) Sink all nailheads, fill holes and cracks with Plastic Wood, and finish as desired. For details on this vital operation, refer to the chapter entitled *Finishing Your Furniture*, pages 128-137. •

Storage Cabinet and Chest of Drawers (Projects 8 and 5) can be unified with the 72 $\frac{3}{4}$ -inch flat top.
Photo by William F. Howland





BILL OF MATERIALS

Note: All lumber, unless otherwise specified, is $\frac{3}{4}$ " plywood.

L-SHAPED UNIT

1 Top (48 $\frac{3}{4}$ " Unit)	20"x48 $\frac{3}{4}$ "
1 Top (72 $\frac{3}{4}$ " Unit)	20"x72 $\frac{3}{4}$ "
1 Side	20"x29"
3 Corner Braces	2"
12 Flathead Wood Screws	$\frac{1}{2}$ " No. 6
2" Finishing Nails	10
Felt or Rubber Strips	2

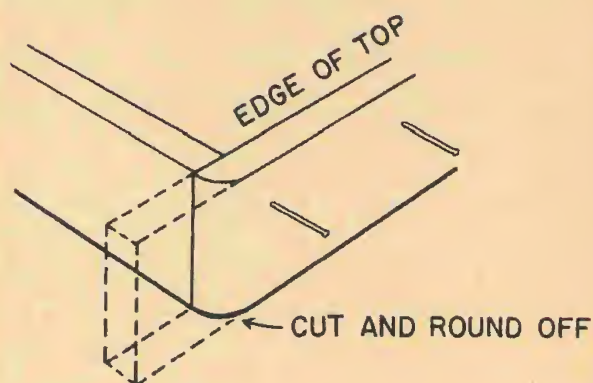
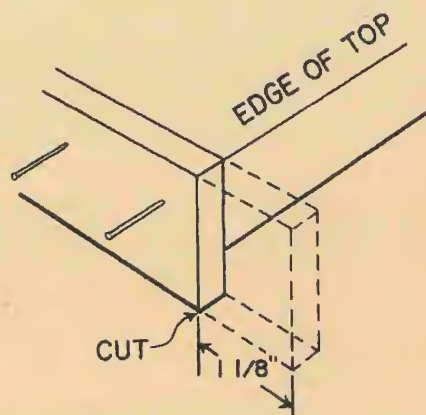
FLAT TOP

48 $\frac{3}{4}$ " Overall

1 Top	20 $\frac{1}{4}$ "x48 $\frac{1}{4}$ "
2 Strips Pine Molding	
1 $\frac{1}{4}$ "x $\frac{1}{4}$ " or 1 $\frac{1}{4}$ "x $\frac{3}{8}$ "	50" long
2 Strips Pine Molding, as above . .	22" long
1 $\frac{1}{4}$ " Wire Brads	$\frac{1}{2}$ Box
Glue	

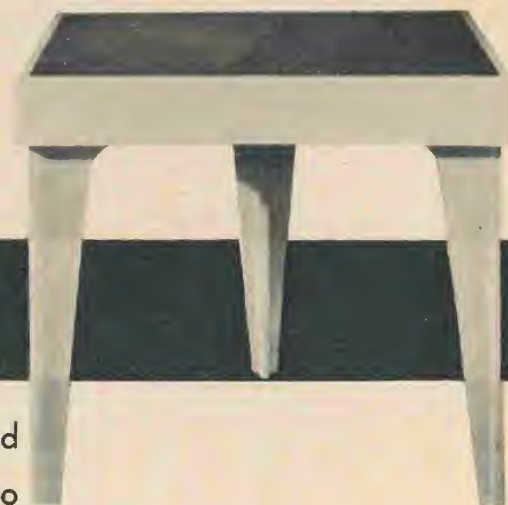
72 $\frac{3}{4}$ " Overall

1 Top	20 $\frac{1}{4}$ "x72 $\frac{1}{4}$ "
2 Strips Pine Molding, as above . .	75" long
2 Strips Pine Molding, as above . .	22" long
1 $\frac{1}{4}$ " Wire Brads	$\frac{1}{2}$ Box
Glue	





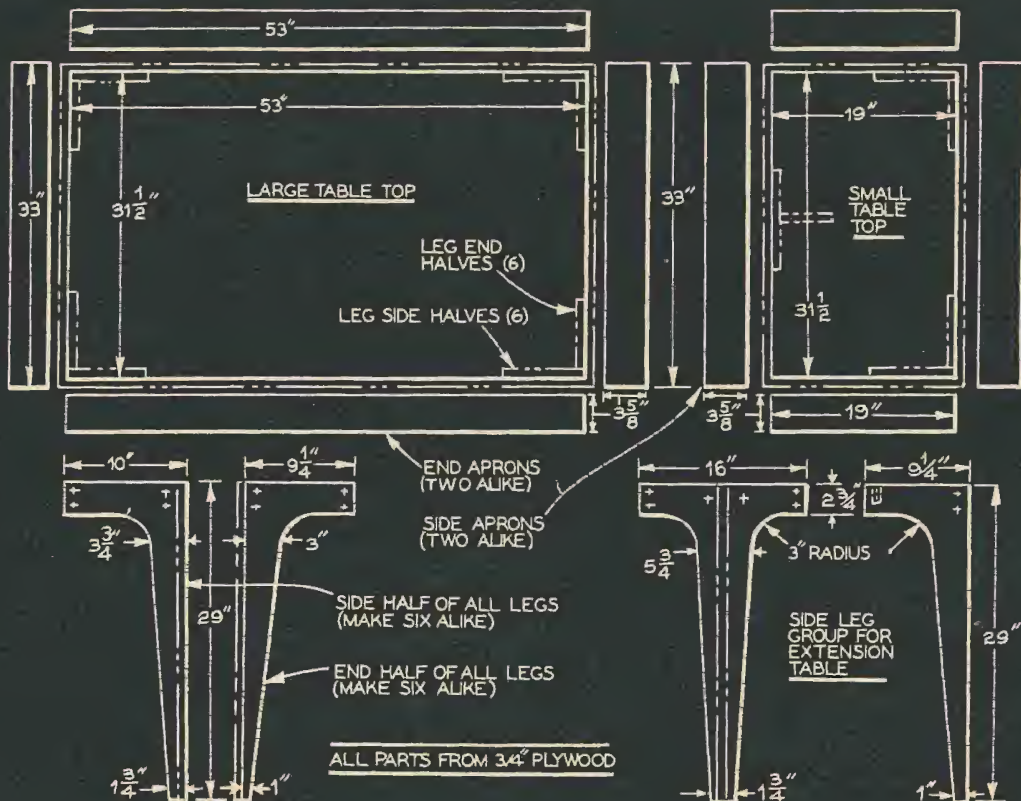
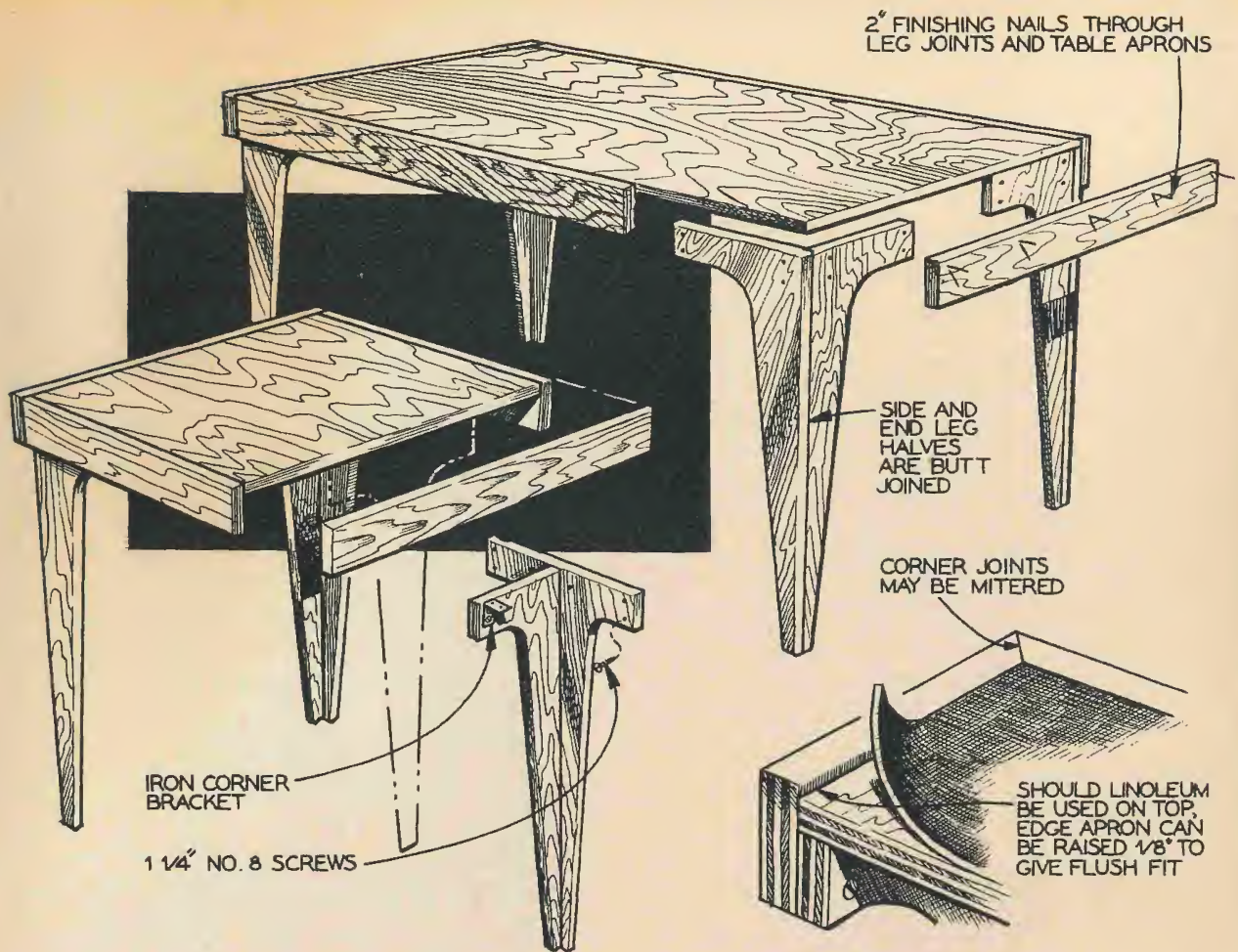
dining table and extension

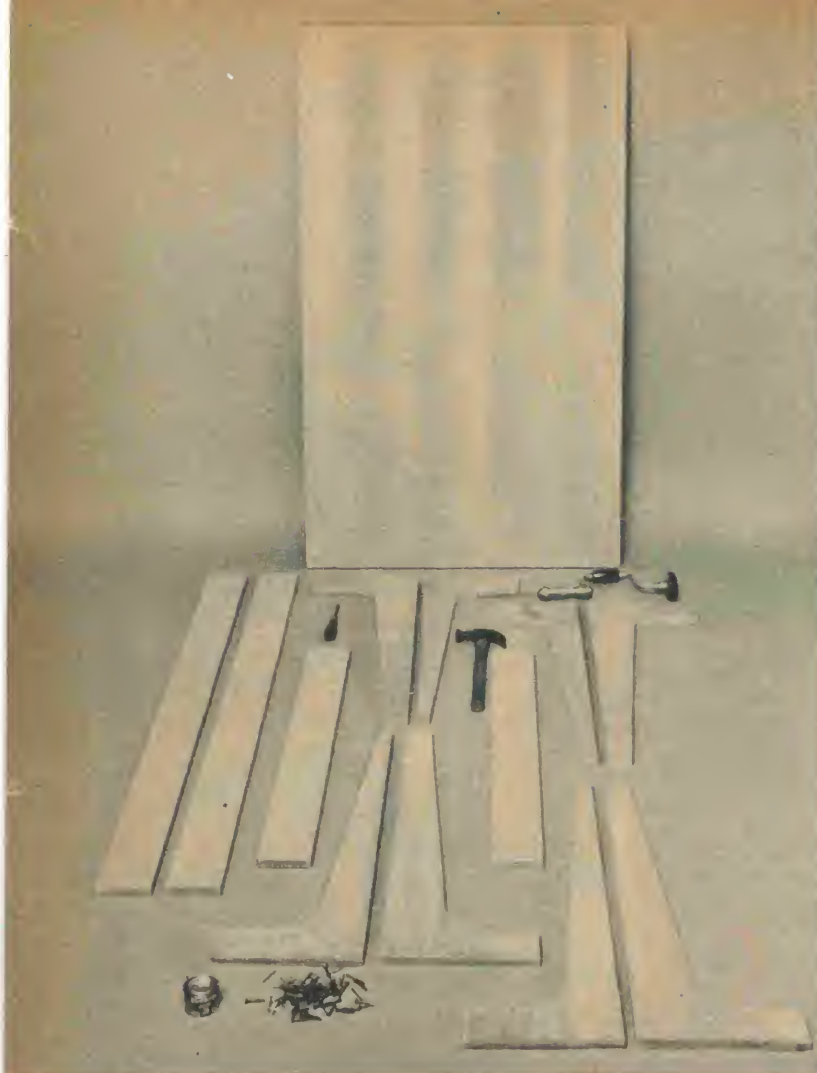


Cramped, crowded table settings are uncalled for—especially when you can build two units that will seat eight diners comfortably.

THE ample surface of this straightforward table easily accommodates up to six diners in full comfort. If you've ever tried to build a table before, you already know that one of the trickiest problems is to attach the legs so that they will be not only firm, but also completely free of that annoying wobble that accompanies so many tables. The method of leg assembly employed in this table all but nullifies the possibility of wobble. In addition, the legs are very strong and require no cross bracing, which means a maximum of comfort for all concerned.

The smaller extension can be used as an occasional or end table when it is not employed for its primary function—that of augmenting the dining table at family banquets or dinner parties.





BILL OF MATERIALS

Note: All lumber, unless otherwise specified, is $\frac{3}{4}$ " plywood.

DINING TABLE

1 Top $31\frac{1}{2}$ " x 53"
 4 Leg Elements cut as shown
 4 Leg Elements cut as shown
 2 Long Apron Members,
 pine or plywood $3\frac{5}{8}$ " x 53"
 2 End Apron Members,
 pine or plywood $3\frac{5}{8}$ " x 33"
 32 Flathead Wood
 Screws $1\frac{1}{4}$ " No. 8
 2" Finishing Nails $\frac{1}{2}$ lb.
 1 Piece Linoleum
 (Optional) $31\frac{1}{2}$ " x 53"
 Linoleum Paste
 Glue

EXTENSION

1 Top 19 " x $31\frac{1}{2}$ "
 2 Leg Elements cut as shown
 3 Leg Elements cut as shown
 1 Side Leg Element . . cut as shown
 2 End Apron Members . . $3\frac{5}{8}$ " x 19 "
 2 Side Apron Members . . $3\frac{5}{8}$ " x 33 "
 22 Flathead Wood
 Screws $1\frac{1}{4}$ " No. 8
 2" Finishing Nails $\frac{1}{2}$ lb.
 1 Corner Brace with $\frac{5}{8}$ " Screws
 1 Piece Linoleum
 (Optional) 19 " x $31\frac{1}{2}$ "
 Linoleum Paste
 Glue

Above: Parts shown are for Dining Table only. Diagram on previous page indicates elements required for both tables. Below: These units were covered with linoleum. Apron was raised to form flush surface.
 Photo by William F. Howland





1. Drive nails part way into your apron members before attempting to attach them. This saves time.



2. Apply glue to edges of top panel. As tables are subjected to moisture, use waterproof variety.

The extension will make at least two additional place settings available.

The true simplicity of all leg assemblies and the method of attaching the 3 $\frac{5}{8}$ -inch pine or plywood apron to the top panel result in a handsome, serviceable duet. As pine is a soft wood, and since all nailheads will be sunk later on, don't hammer your nails too hard, or you'll mar the wood. It is difficult and time-consuming to sand out marks left by hammer blows.

Linoleum may be used if desired, but if it is, you'll have to raise the aprons by the thickness of your linoleum to make a flush

top. (This step is indicated in the sketch detail on page 79.)

Dining Table: Cut pieces to sizes shown in the sketches and bill of materials. If you are going to use linoleum, apply a thin coat of shellac—one part shellac to four parts alcohol—to both sides of your top panel. This will reduce the possibility of warping when your linoleum paste is spread on. Now apply a heavy layer of linoleum paste to the top; lay linoleum in place, and put heavy weights (books, etc.) on top of the linoleum. Allow it to dry for 24 hours.

3. Carefully position long rail in place. Be sure that good surfaces of plywood face the right way.



4. After placing the rail so that its ends are flush with edges of top panel, drive in nails.





5. You're ready to attach the shorter units at this stage. Notice that nails have been started.

If you decide not to use linoleum, simply proceed to the next step after cutting, which is to glue and nail the two long end elements of the apron to the top. Note that these side pieces are flush with the ends of the top. Now glue and nail the two apron elements on the ends. The corner joints of the apron may be either butted or mitered,

7. Put the top assembly on the floor in this position before attempting to attach the short rails.



6. Short rails are placed outside long ones. Miter joint can be used if you have the facilities.

depending on your own convenience or inclination. You now have a top panel with an apron around all four edges. Round off the corners and top of your apron with sandpaper.

Now for the legs. First bore four pilot holes for No. 8 flathead wood screws in each leg, as indicated in the diagram. Glue

8. Sand down exposed edges of apron. Pine or other stock makes more attractive apron than plywood.





9. Begin leg assembly by boring four pilot holes in each leg to accept 1¼-inch flathead screws.



10. Each leg assembly is composed of two elements, one 10 inches, the other 9¼ inches, across the top.

and nail the two legs together. Note that the member with the 9¼-inch top surface is butted *inside* the edge of the member with the 10-inch top. Now glue and nail the remaining two legs, but in the opposite direction. This method of butting the leg joints is made clear in the diagram on page 79. Refer to the area labeled "Large Table

Top." The positions of the respective butts are indicated in the corner areas of the table top.

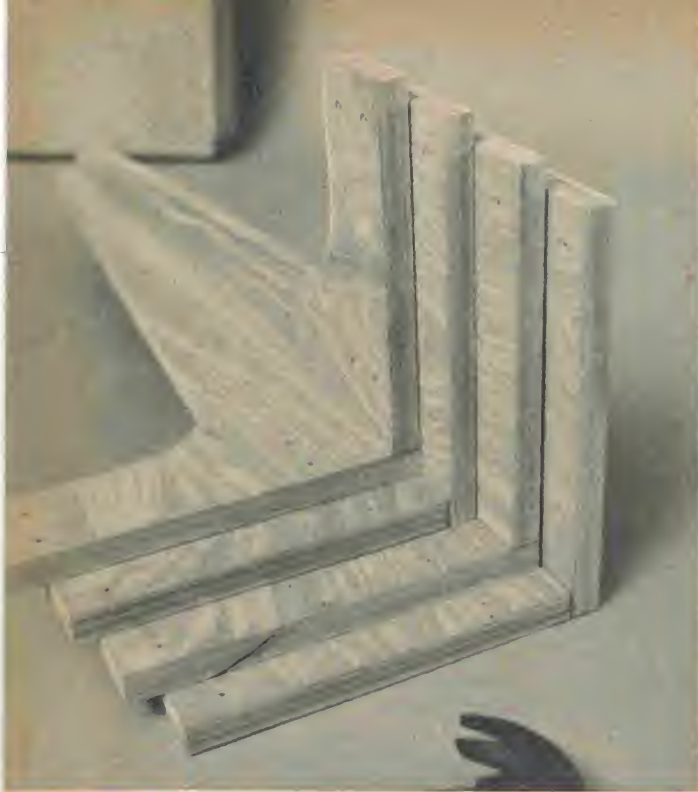
Glue and screw the assembled legs to the inside surface of the apron with 1¼-inch No. 8 flathead wood screws. This completes assembly. Sink all nailheads with a punch, filling holes with Plastic Wood or

11. Make up two complete leg assemblies by butting and joining the elements as depicted below.



12. Now join the remaining two assemblies, but this time in the opposite direction (see sketch).





13. All four completed leg assemblies; observe how the first and third differ from the other pair.



14. With top assembly inverted, position each leg unit firmly into its respective corner, and attach.

Combination of Dining Chairs (Project 6) and Dining Table adds up to a tasteful, inviting setting in any atmosphere. All units portrayed here were finished natural to emphasize the attractive birch grain.





Photo by William F. Howland

Solid birch was used for this apron, which was mitered at the corners. Installation of linoleum is an optional feature, and can be omitted if desired. Webbed Stool (Project 4) is at extreme left.

other composition filler. Sand the table well, and finish as desired.

Extension: The construction procedure for this unit is almost identical to that of the Dining Table itself, but there are a few departures. First of all, notice that the apron is attached so that its *long* members extend to cover the ends of the shorter ones. A new piece is required for the extension: the side leg, with its 16-inch top surface. When joined with its other elements, this side leg group is glued and

screwed into position at an equal distance from both sides with 1¼-inch No. 8 flat-head wood screws. A corner brace is also employed to stiffen this member. Position it as shown in the sketch. It is attached with ⅝-inch screws.

In use, the extension is placed against the dining table so that the single middle leg assembly is at the juncture of both units. In this manner, the very useful "third leg" is both out of sight and out of the way. •

project 15



Photo by Bill Jackson

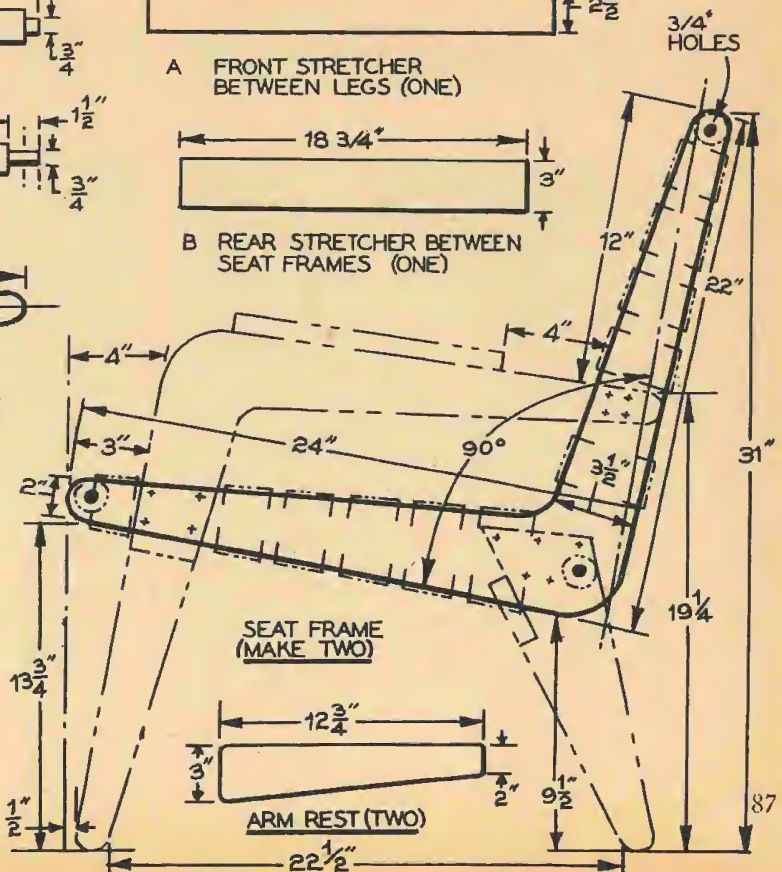
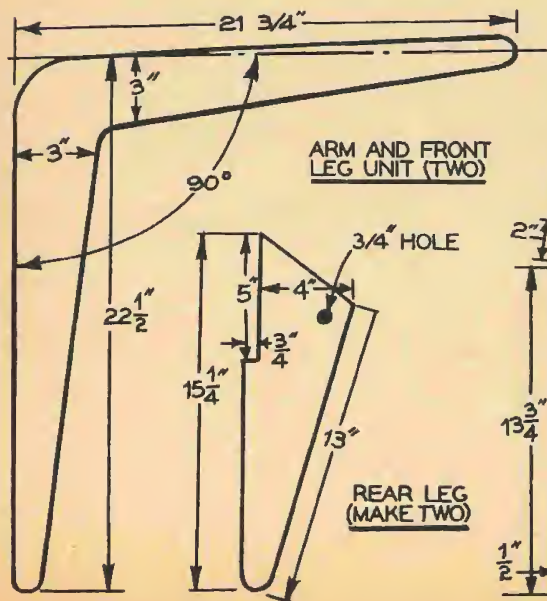
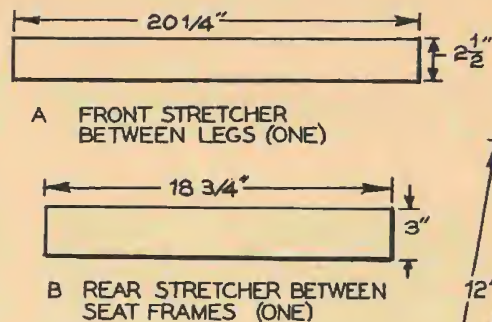
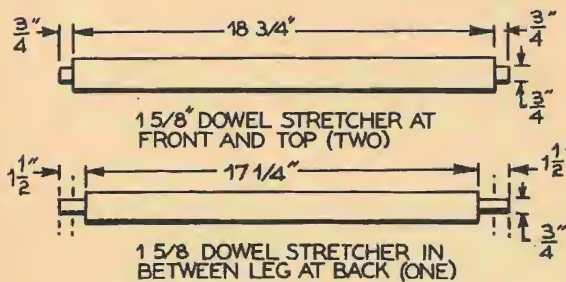
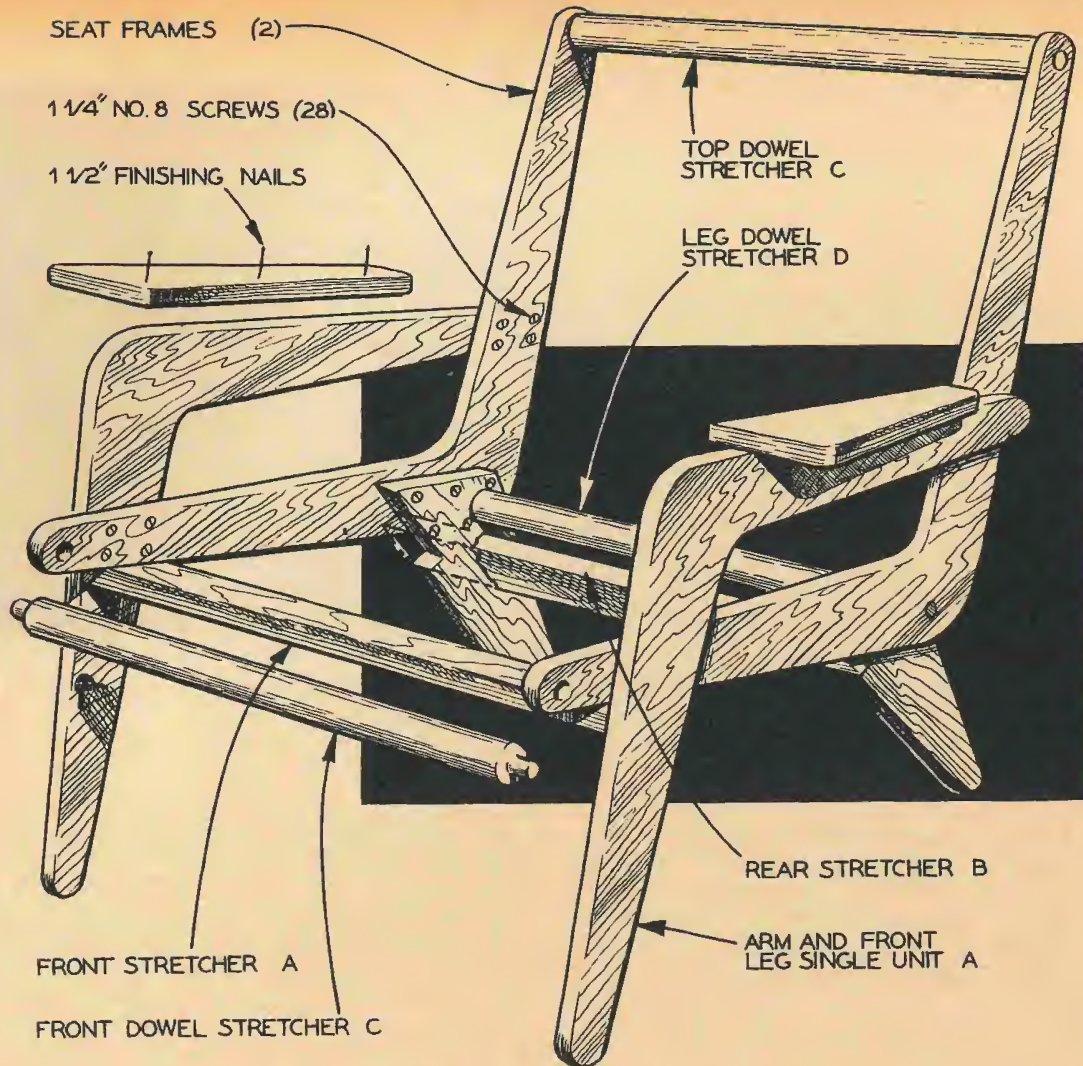
armchair

These chairs offer proof that well-designed contemporary furniture provides comfort and beauty without fancy frills.

WHAT living room is complete without a few deep, comfortable armchairs? The design shown on these pages shows how you can construct such chairs along modern lines. Admittedly, they bear no resemblance to the overstuffed monstrosities of bygone days, but they still embody the basic characteristics of any armchair: relaxing arm rests and solid comfort.

Assembly: Cut all pieces to exact size given in the diagrams and bill of materials, and bore all $\frac{3}{4}$ -inch holes to accept dowel tenons where indicated.

Screw one seat frame to its arm unit. Notice that the seat frame is attached *inside* of the arm unit. Repeat this operation with the opposite two units; $1\frac{1}{4}$ -inch No. 8 flathead wood screws are used throughout. Observe that although the overall lengths of the three dowel stretchers are identical, $20\frac{1}{4}$ inches, the tenons on each end of dowels A and C are only $\frac{3}{4}$ inch long, whereas the tenons on the ends of dowel D are $1\frac{1}{2}$ inches long. This is so because each tenon



BILL OF MATERIALS

Note: All lumber, unless otherwise specified, is $\frac{3}{4}$ " plywood.

2 Seat Frames, with $\frac{3}{4}$ " holes . . .	cut as shown
2 Arms (Front Legs)	cut as shown
2 Rear Legs, with $\frac{3}{4}$ " holes . . .	cut as shown
1 Front Stretcher	$2\frac{1}{2}$ "x $20\frac{1}{4}$ "
1 Rear Stretcher	3 "x $18\frac{3}{4}$ "
2 Arm Rests	cut as shown
3 Dowel Stretchers, $1\frac{5}{8}$ " or $1\frac{3}{8}$ "	$20\frac{1}{4}$ " overall
30 Flathead Wood Screws	$1\frac{1}{4}$ " No. 8
$1\frac{1}{2}$ " Finishing Nails	$\frac{1}{2}$ lb.
No. 6 Upholstery Tacks	1 Box
2" Webbing	25 Yards

of the latter member must go through *two* thicknesses of $\frac{3}{4}$ -inch plywood: the seat frame and leg, whereas the other tenons go through only one thickness. Although $1\frac{5}{8}$ -inch dowels are indicated, you may substitute $1\frac{3}{8}$ -inch round stock, if desired.

Now screw one rear leg to the seat frame, but on the face opposite to the arm. To make sure that the dowel holes of the seat frame and the leg coincide exactly, insert

dowel D temporarily, without glue. Attach the opposite rear leg, using the same procedure.

Apply glue into the tenon holes of one side assembly and to one group of tenons, and insert the dowels in place. Make sure that dowel D is placed in its correct position, that is, at the bottom rear of the chair. Add the opposite side assembly, after gluing holes and tenons.

1. Once elements are cut to size and $\frac{3}{4}$ -inch holes bored to accept the dowel tenons, attach one arm and seat frame with $1\frac{1}{4}$ -inch flathead wood screws.

2. Using the assembled side as a template, attach the opposite assembly. In both instances the arms go on the outside surfaces of the seat frames.





3. Rear leg goes on inside surface of frame. Dowel D is inserted without glue to line up these pieces.

Glue and nail the $2\frac{1}{2} \times 20\frac{1}{4}$ -inch front stretcher. Nail through the stretcher into the seat frame, and also through each arm into the stretcher. Now glue and nail the $3 \times 18\frac{3}{4}$ -inch rear stretcher to the recesses of the rear legs. Use two or three $1\frac{1}{2}$ -inch finishing nails at each end. At this stage, you are ready to add the arm rests. Glue and nail them to the arms with $1\frac{1}{2}$ -inch finishing nails. Notice that the straight

edges of both arm rests face the inside of the frame.

This completes assembly. However, to assure good glue joints, tie seat frames together with stout cord, just above the arms. Use a hammer or screwdriver as a tightening device. (See photograph on page 41 for this procedure.) Allow the glue to dry completely—about eight hours—before removing your cord.

4. Five screws are driven through each rear leg into the seat frame. Save yourself work by boring pilot holes and countersinks where necessary.

5. Repeat operation shown at left, so that both side assemblies are now completed. To combine them, attach glue to tenons and holes of one side.





6. After dabbing glue into the holes of one side, insert the dowels into their respective holes. Remember that dowel D goes through the rear legs.



7. Glue opposite tenons and holes, then lift the second side and position the tenons. Be sure that both rear legs face inside during this operation.

To make sure that the dowels will not eventually become loose, drive a single finishing nail into each dowel end, as shown in the photograph on page 91. Sink all visible nailheads into the wood about $\frac{1}{8}$ inch, using a nail punch. Fill all holes with a wood composition filler.

Since you won't be able to finish the chair after webbing has been tacked on, it should be finished now. Sand down the entire frame, especially all sharp edges, before applying any type of finish. Paste wax may be successfully employed to finish

chairs; simply rub it on with a cloth, let it dry according to the manufacturer's instructions, then buff. No other finish will be required.

Webbing: After the frame has been painted or varnished, you are ready to web. Cut seven strips 47 inches long for your vertical strips, and fifteen 32-inch pieces for your horizontal strips. Distribute eight of the short strips evenly over the seat area.

The second strip from the front of the seat is tacked to the top of the frame. For the remaining strips, tack one edge to the

8. The front and rear stretchers are next. Drive two or three $1\frac{1}{2}$ -inch finishing nails part way into ends of both pieces to save strain on frame.

9. Front stretcher is nailed into the underside of the seat frames and also through both legs. For extra strength, use glue at these joints.





10. The rear stretcher is inserted into its recesses and is nailed to both legs. This step completes the assembly of your entire armchair frame unit.



11. The 12 $\frac{3}{4}$ -inch-long arm rests are glued and nailed in place. Be sure tapered ends face back of chair. Sink all nailheads $\frac{1}{8}$ inch into wood.

lower edge of the frame. Distribute seven strips over the back. The second and third strips from the bottom are tacked on the top edge of the frame. The rest of the strips are tacked on the outside edge of the frame. Fold the ends of all strips double for extra strength. Stretch your webbing as tightly as possible, cut off excess, leaving enough for a doubled end, and tack to the lower edge of the frame.

For the horizontal webbing, first space the strips evenly, then fold the ends and tack your seven long strips to the underside

of the top dowel C. Interweave these strips with the attached horizontal pieces. Double the ends and tack to the bottom dowel C. Do not pull the long strips too tightly, as this creates an uncomfortable bulge. New webbing may stretch; to tighten, restretch cross strips on seat only.

Either plastic or cloth webbing may be employed. Since both types are available in many shades, you can easily choose one to complement your present color scheme. For a photo story concerning webbing procedure, see Working with Webbing. •

12. Before glue has dried, drive single finishing nail into ends of all dowels to assure a good bond.



project 16



bed and headboard

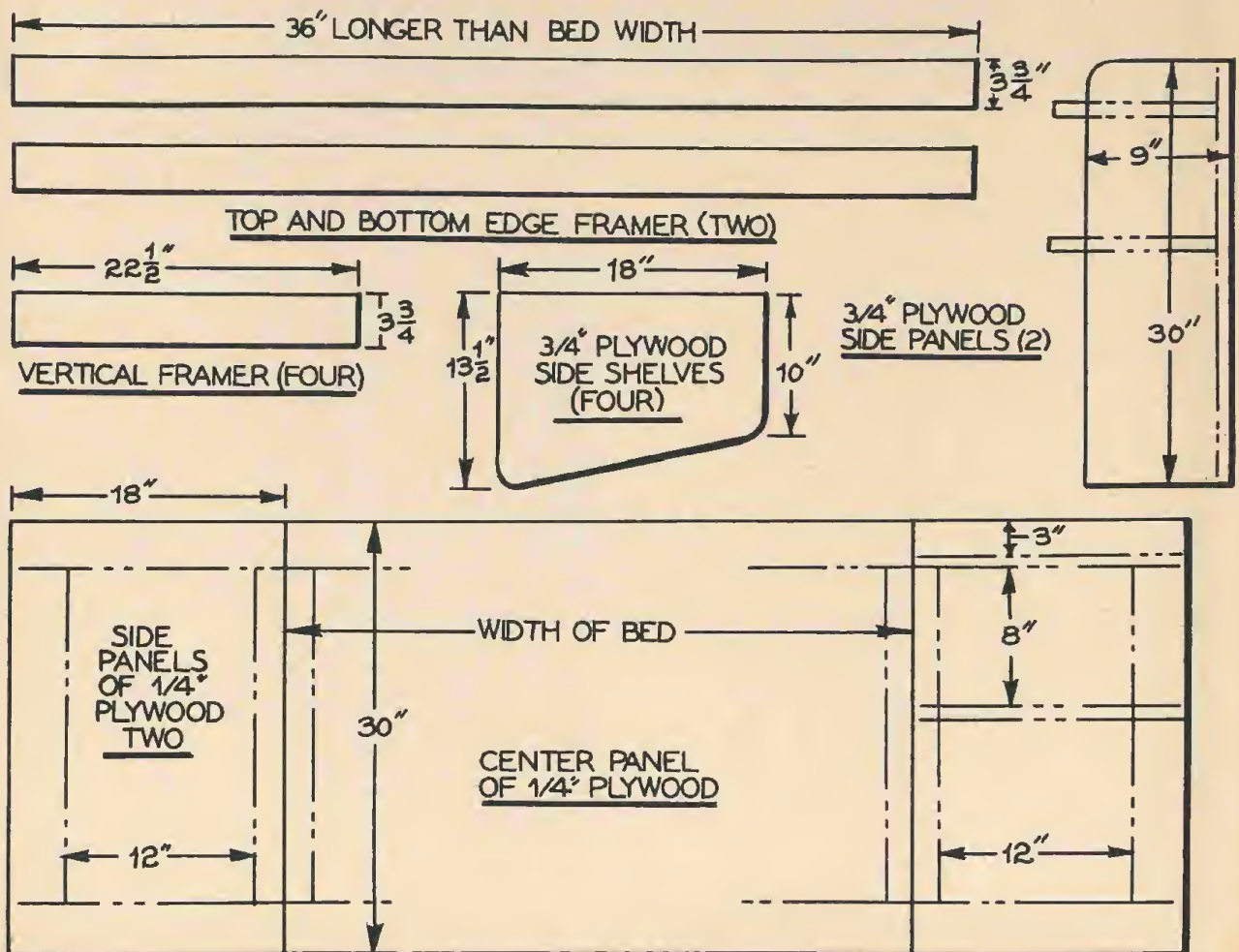
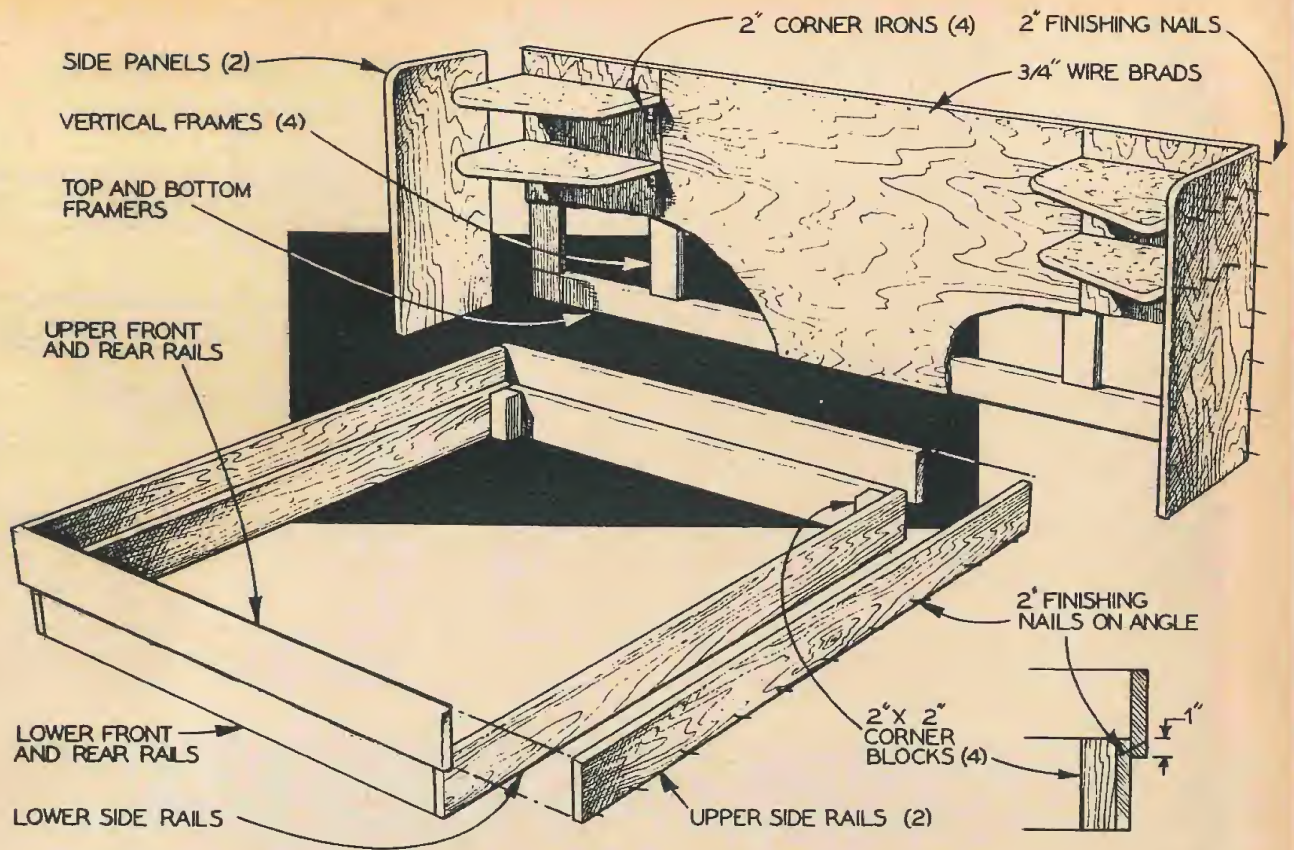
Photo by Bill Jackson

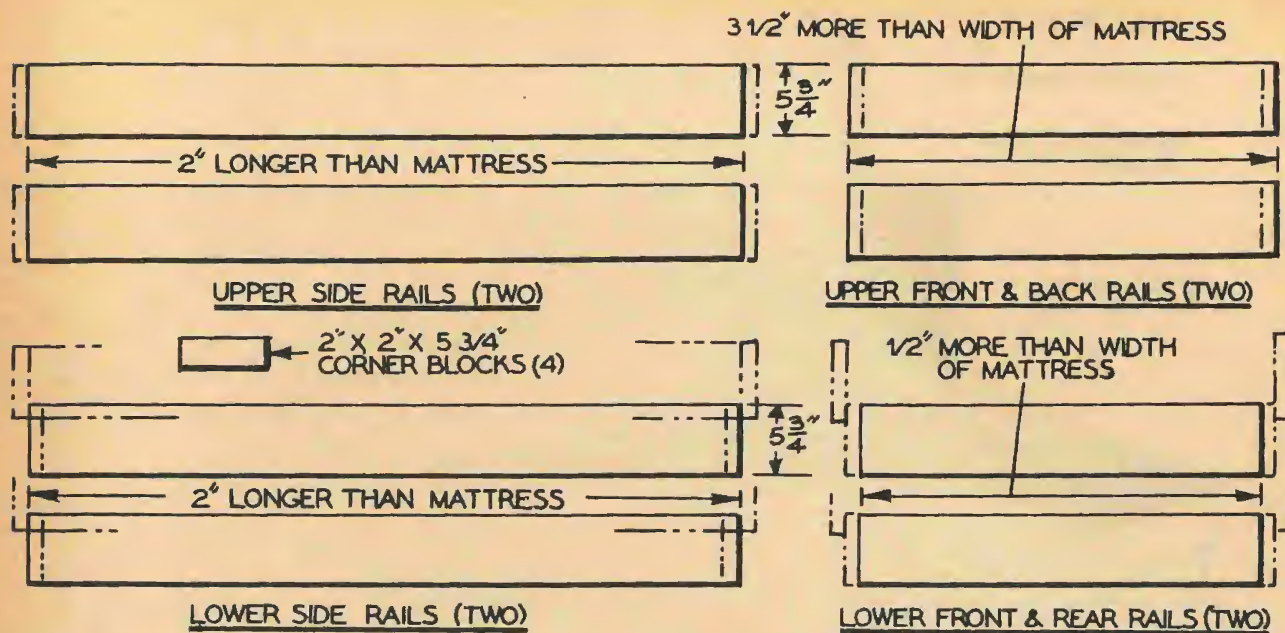
Build either piece that you need to complete your bedroom furnishings.

Both are completely adaptable to accommodate your present units.

IMPOSSIBLE to build your own bedroom furniture? Not if you follow these plans for easily constructed, sturdy, and attractive pieces. Both units are, of course, independent of each other. You can build whichever one you need, or both. The headboard can be combined with a bed you already own, or with the Studio Couch (Project 18). In either case, some dimensions cannot be accurately stated, so that you can build these units to any size desired. Simply measure your mattress or your bed, as the case may be, to determine the missing dimensions in the bill of materials.

Headboard: After determining how long your pieces should be, cut them to size. Place your $3\frac{3}{4}$ -inch frames on the floor (either pine or plywood may be used for these members). Nail the $\frac{1}{4}$ -inch plywood





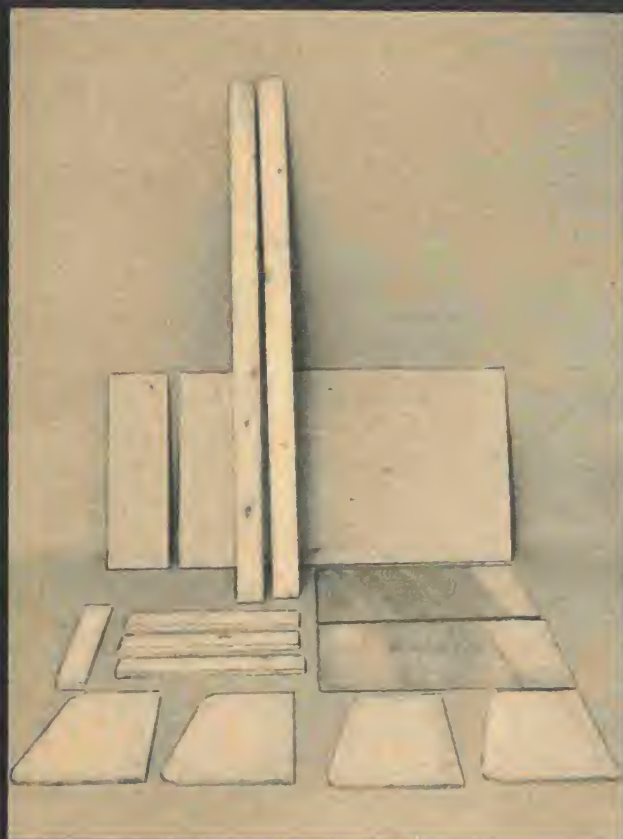
BILL OF MATERIALS

HEADBOARD

- 2 Long Framers (3/4" pine) 3 3/4" wide
(To obtain length, add 36" to total width of bed)
- 4 Vertical Frames (3/4" pine) 3 3/4"x22 1/2"
- 2 End Facings (1/4" plywood) 18"x30"
- 1 Center Facing (1/4" plywood) 30" high
(Width is equivalent to total width of bed)
- 2 Sides (3/4" plywood) 9"x30"
- 4 Shelves (3/4" plywood) cut as shown
- 2" Finishing Nails 1 lb.
- 3/4" Wire Brads 1 box
- 4 Corner Braces 2"
- 16 Flathead Wood Screws 5/8" No. 6 or 7

BED FRAME

- 2 Lower Side Rails (3/4" pine) 5 3/4" wide
(To obtain length, add 2" to length of mattress)
- 2 Lower Front and Rear Rails (3/4" pine) 5 3/4" wide
(To obtain length, add 1/2" to width of mattress)
- 4 Corner Blocks (pine) 2"x2"x5 3/4"
- 2 Upper Side Rails (3/4" pine) 5 3/4" wide
(To obtain length, add 2" to length of mattress)
- 2 Upper Front and Back Rails (3/4" pine) 5 3/4" wide
(To obtain length, add 3 1/2" to width of mattress)
- 2" Finishing Nails 1 lb.





Above: In making headboard, first determine total length. Put the $3\frac{3}{4}$ -inch pine frame elements on floor; position one $\frac{1}{4}$ -inch plywood end facing.



Above right: The center $\frac{1}{4}$ -inch plywood panel should be as long as total width of your bed. This long panel overlaps both middle vertical frames.



Right: Position opposite end facing to make sure all three elements fit properly, then attach them to the framing members with $\frac{3}{4}$ -inch wire brads.

facing to your frames with $\frac{3}{4}$ -inch wire brads. Make sure all parts remain in position during this operation.

Now attach the 9x30-inch side panels to the completed back assembly. Use 2-inch finishing nails. Install the four shelves by nailing through the side pieces and the back assembly. Round off the top front corners of the side panels with a small saw, rasp or sandpaper, and install the metal corner braces (two per shelf) with $\frac{5}{8}$ -inch screws. Sink all nailheads into your wood

and cover all holes and cracks with Plastic Wood. Sand well, particularly the edges, and finish as desired.

Bed Frame: This is a standard type of frame that will accommodate either a link-spring and mattress, or a box-spring and mattress. If you use the latter combination, make the upper rails $7\frac{3}{4}$ inches wide instead of the $5\frac{3}{4}$ inches specified. Cut all pieces to required size. Nail the lower side rails and front and rear rails together to form your basic framework. Short rails



The 9x30-inch side pieces ($\frac{3}{4}$ -inch plywood) are now nailed to the edges of the end vertical frames. Notice how the sides are butted against the frame assembly. Two-inch finishing nails are employed.



Shelves are now installed, two to each side of the headboard, are nailed through sides and back. Hammer very lightly to avoid marring your wood. All nailheads will be sunk later with a punch or set.

are inserted *between* the long ones. Two-inch finishing nails are employed. Now nail the four corner blocks into the corners of the frame. Place the upper side rails on the assembled base so that a 1-inch overlap results. Nail these upper side rails to the base, inserting nails at a 45-degree angle. (See detail in the upper sketch on page 93 for this entire procedure.)

Now nail upper end rails to the base and to the long rails. Insert three or more nails through the butt joints of the upper rails.

Sink all nailheads about $\frac{1}{8}$ inch with a punch. Fill all holes or defects in the plywood, if any, with wood composition filler. Sand the unit well, and finish as desired.

A much simpler bed can be made by omitting the upper rail assembly completely, and by nailing a slab of $\frac{5}{8}$ or $\frac{3}{4}$ -inch plywood to the top of your frame. This type of bed will have no resilience whatsoever, and is only comfortable with an innerspring or foam-rubber mattress. If you use the latter, the base should be somewhat higher, as the standard thickness of foam-rubber mattresses does not exceed $4\frac{1}{2}$ inches.

If you drive round steel glides into the bottom edges of the base assembly, the lady of the house will be able to shift the bed about effortlessly when she's sweeping the bedroom or changing linens. •



Use a pair of 2-inch angle braces to strengthen each shelf. Note that the screws will be driven into both middle vertical frames, not merely through the $\frac{1}{4}$ -inch plywood. As can be seen from this view, it would have been easier to have attached the braces to the shelves before the latter were nailed into position.

Side view of headboard being used with conventional bed. By altering dimensions of frames and plywood panels, headboard can be used with any unit. Handy shelves are large enough to hold all bedside needs.



project 17



Comfortable corner comprises Lounge Chair and Rectangular Coffee Table in background. The chair frame can be finished to blend with the other furnishings or decorative effects in your own living room.
Photo by Bill Jackson

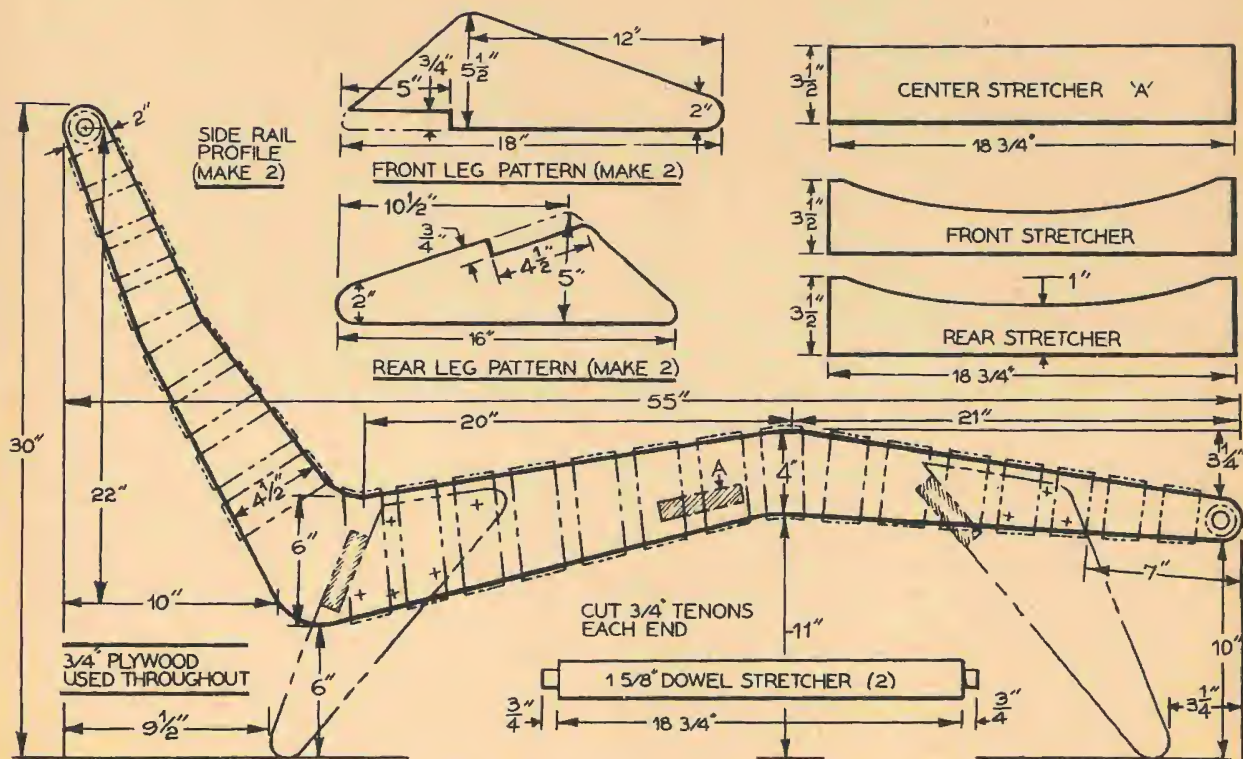
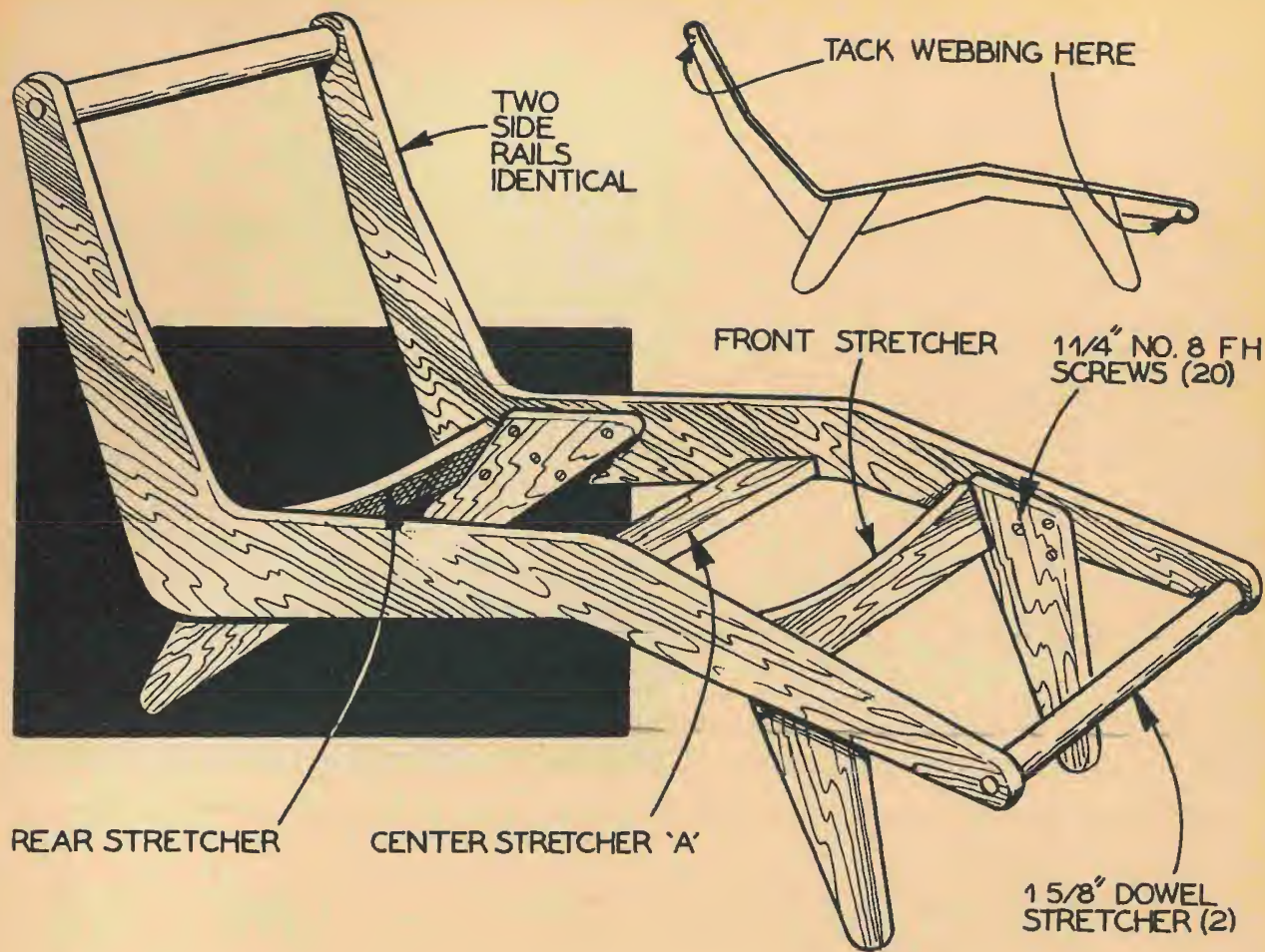
lounge chair

Streamline your living room—and your hours of leisure—with a restful contour chair. It's as easy to make as any chair in this book.

LUXURIOUS comfort is assured with this long, low lounge chair that will be at ease in either your living room, bedroom, or porch. Although this piece may look complicated to build, its construction procedure is identical to that of every other chair included in this volume.

Before attempting to lay out or cut any of your material, be sure to make templates for each curved member. Use stiff cardboard for this purpose. In this manner, you'll be able to determine the most economical method of laying out your pieces and as a result, you'll save both time and materials.

Assembly: Once you have laid out your elements, cut them all to size. After boring the $\frac{3}{4}$ -inch holes through the ends of the side rails, make appropriate pilot holes and countersinks in all four legs. You'll notice that although all legs are shown with recesses in both sketches,





BILL OF MATERIALS

Note: All lumber is $\frac{3}{4}$ " plywood.

2 Sides	cut as shown
2 Front Legs	cut as shown
2 Rear Legs	cut as shown
1 Front Curved Stretcher	$3\frac{1}{2}$ "x $18\frac{3}{4}$ "
1 Rear Curved Stretcher	$3\frac{1}{2}$ "x $18\frac{3}{4}$ "
1 Center Stretcher "A"	$3\frac{1}{2}$ "x $18\frac{3}{4}$ "
2 Dowel Stretchers, $1\frac{5}{8}$ " diam.	20 $\frac{1}{4}$ " overall
20 Flathead Wood Screws	$1\frac{1}{4}$ " No. 8
$1\frac{1}{2}$ " Finishing Nails	20
No. 8 Carpet Tacks	2 Boxes
Glue	
2" Upholstery Webbing	50 Yards

You may include recesses in rear legs to accept the stretcher, although they are not indicated in photo.



1. Lay one side rail on the floor and attach both legs to its inside surface. Use glue and screws.



2. After one side is assembled, place it in the position shown; put the other side piece on top.

the rear legs shown in the bill of materials photo and in the assembly pictures are cut flush (see photo 7). However, you'll find it worthwhile to cut these recesses, for they will greatly increase the strength of the frame when the rear stretcher is installed.

Attach one front and one rear leg to their respective side rail, screwing them in so that they are in the *inside* of each rail.

At this point you're ready to repeat this

procedure for the other rail, but in the opposite direction. This can be accomplished by laying the completed side assembly on the floor with the legs down. Align the opposite rail over the unit on the floor, pencil in the position of the second pair of legs, and attach them.

Apply glue to one end of both dowel stretchers and to their corresponding holes in one side assembly, and insert the tenons.

3. Using assembled side as a guide, find correct position of unattached rear leg, and pencil it in.



4. Repeat this operation for the front leg, then attach both legs to complete second side assembly.



5. With legs facing up, apply glue to holes and to one set of dowel tenons. Put tenons in holes.



6. Place the $3\frac{1}{2} \times 18\frac{1}{4}$ -inch front stretcher into the recesses of the front legs, and nail it firmly.

Now glue and nail both curved stretchers into their respective leg recesses. Note that in both cases the curved edges face the seat area. Engage the dowel tenons in the holes of the opposite side assembly; attach the free ends of the curved stretchers, and insert the center stretcher. This completes your chair frame.

To assure good glue joints, tie the two sides of the chair together at the top and

near the front legs. Tighten your cord by twisting it with a piece of scrap lumber or a clothes hanger, then twist your levering device under their respective dowel stretchers, as shown in photo 10.

To make sure that your dowel stretchers will not eventually become loose, drive a single finishing nail into each dowel end. (Refer to the photo on page 91 for exact position.)

7. Rear stretcher is added. For extra strength, cut recesses along back edges of these legs. Curved edges of both stretchers face seat area.

8. With both curved stretchers nailed to one side, apply glue to free tenons and to holes of other side. Lift as shown, engage tenons in holes.



Sink all nailheads about $\frac{1}{8}$ inch with a nail punch; fill all holes or cracks with wood composition filler. Wipe off excess glue, allow about eight hours for the joints to dry, sand well, and finish your chair as desired.

Webbing: You will need seven vertical strips of two-inch-wide webbing 72 inches long and twenty-four horizontal strips 34 inches long. First distribute sixteen of the short strips evenly over the seat area. Tack one end to the underside of the frame, doubling it for extra strength. Distribute the eight remaining strips over the back, repeating this procedure.

Stretch webbing as tightly as possible and, again allowing for doubled ends, cut off the excess and fasten on the other side.

Evenly space and tack the seven long strips to the underside of the top dowel stretcher. Interweave your vertical strips with the horizontal ones already fastened, and tack the free ends to the underside of the front dowel stretcher. As previously stated, double all ends. Do not pull these long strips too tightly, or an uncomfortable bulge will result. Remember that new webbing may stretch. To tighten, simply restretch cross strips on the seat area only. For photos of a typical webbing operation, refer to the chapter Working with Webbing, pages 124-127. •



9. Nail loose ends of the curved stretchers to their respective leg recesses, and install the straight-edged stretcher to complete frame.



Crosswise strips of webbing are attached to undersides of side rails, lengthwise strips to dowels.



10. Clamp the frame near each dowel with a rig like this. Since both dowels will be under tension when the chair is being used, drive a finishing nail into each end to supplement glue joints and to keep dowels from rotating.



project 18



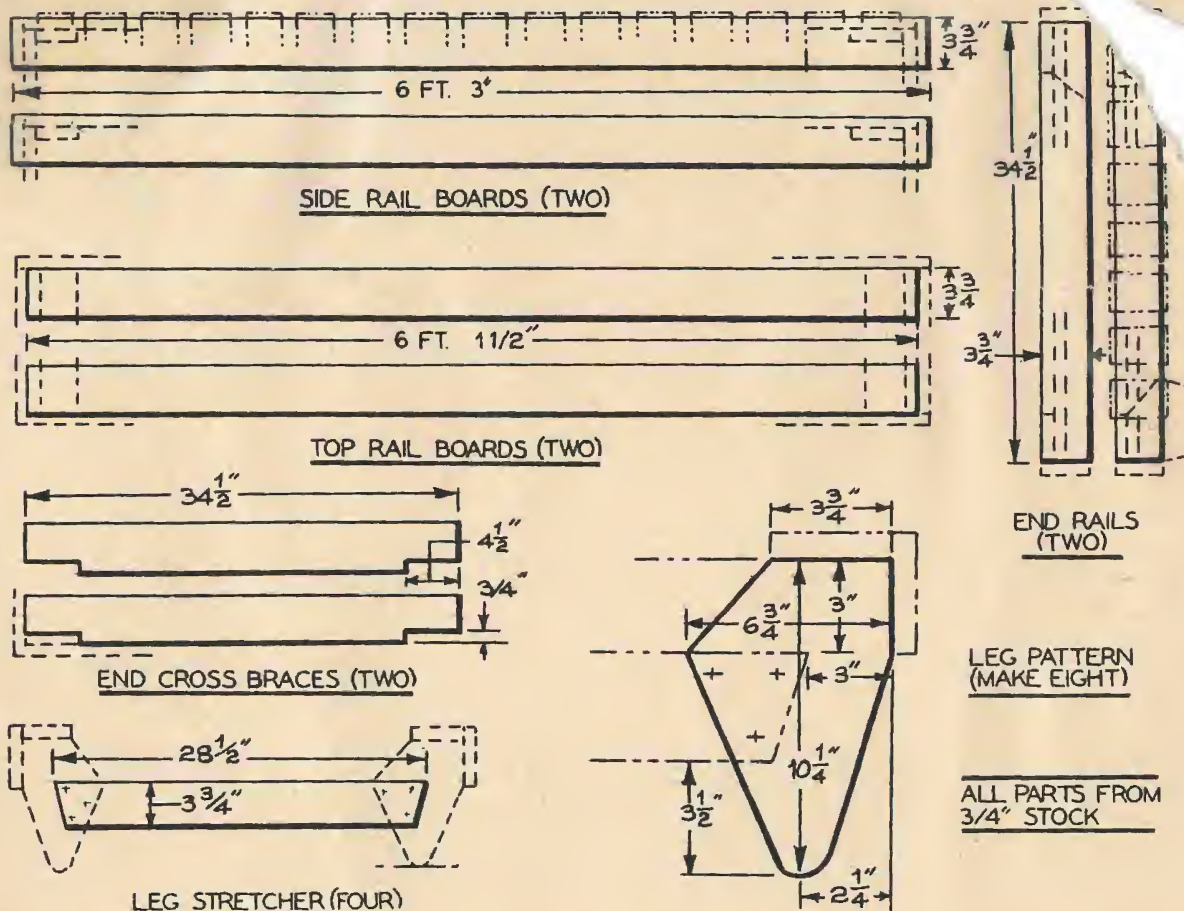
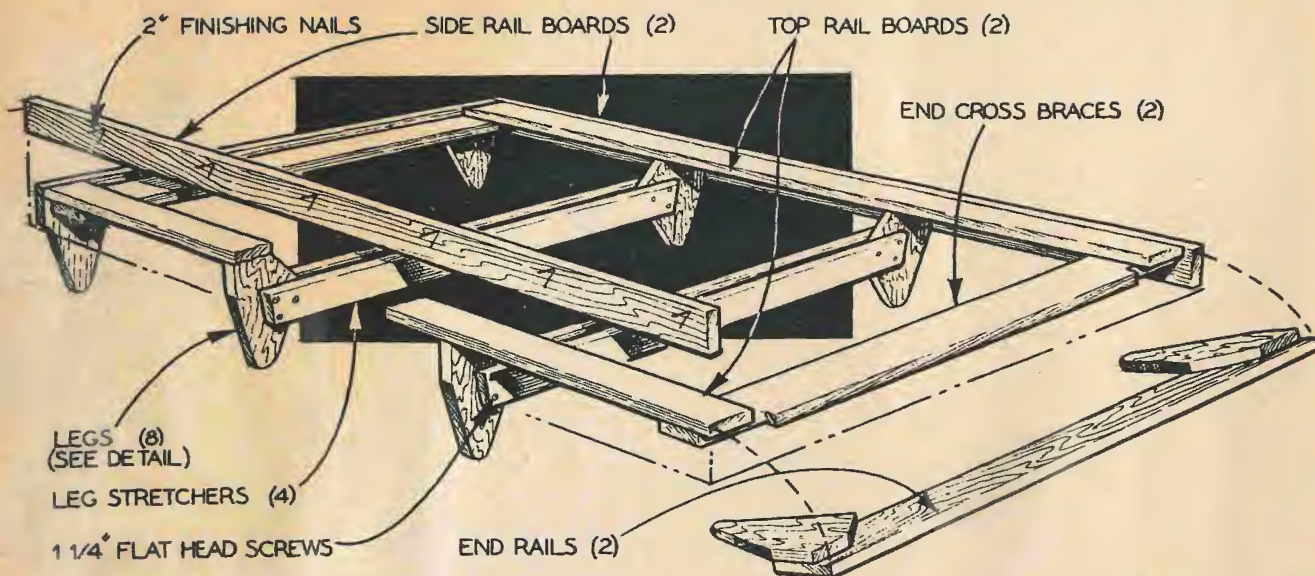
studio couch

Sturdy webbing offers resilience and support in this design that can be easily modified to accept any single or twin-size mattress.

Photo by Bill Jackson

ALTHOUGH designed to accommodate a 36x75-inch mattress, the dimensions of this comfortable, attractive frame can be altered to be used with mattresses of any size. If you depart from the size shown, simply figure out the new widths of the end cross braces, the end rails, and the four leg stretchers. Also, you will need either more or less webbing, depending on your modification. You'll find this frame ideal for a foam-rubber mattress; these are now made in many widths and in a standard thickness of 4½ inches.

Assembly: Solid pine 3¾ inches wide is used throughout, with the

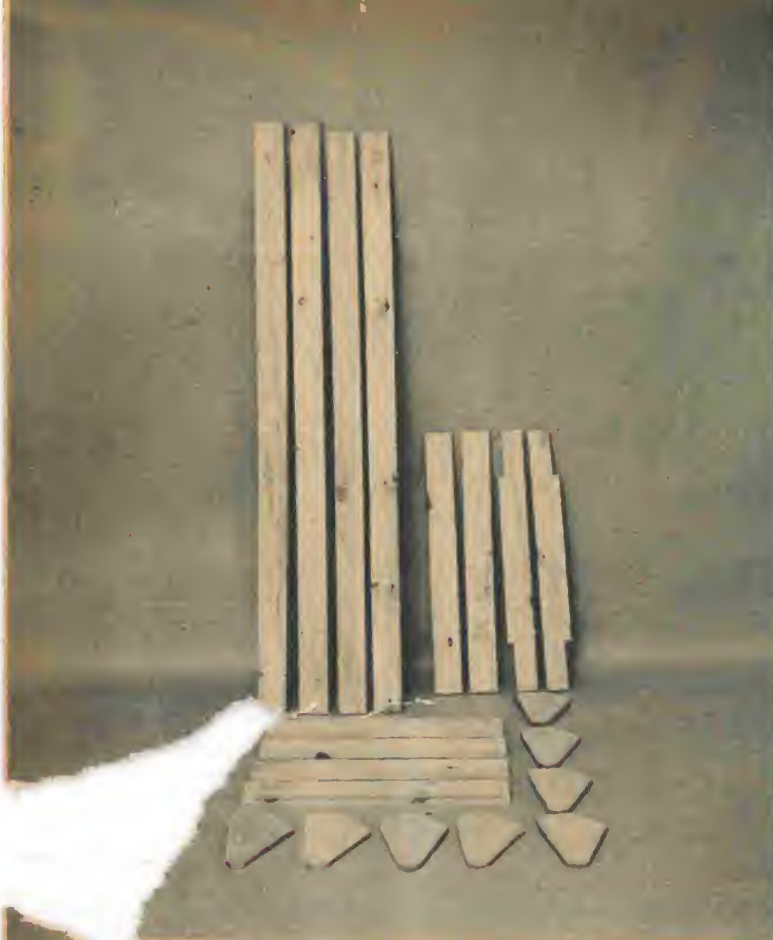


exception of the legs, which are 3/4-inch plywood. Remember that pine is quite soft, so hammer all nails very lightly to avoid marring your wood. Cut all pieces to size, then make appropriate cutouts in both end cross braces. Bore four pilot holes for 1 1/4-inch flathead wood screws into each of the four corner legs only, then screw these legs to the 3 3/4 x 34 1/2-inch end rails. Notice from

the photographs that the legs are butted against the ends of the rails, and also that each leg is attached 3/4 inch from the tops of the rails.

Now assemble the 3 3/4 x 28 1/2-inch leg stretchers with the four center legs. These stretchers are screwed to both sides of the center legs.

Nail the 6-foot 3-inch side rails and the



BILL OF MATERIALS

Note: All lumber, unless otherwise specified, is $\frac{3}{4}$ " pine.

2 Side Rails	$3\frac{3}{4}" \times 6'3"$
2 Top Rails	$3\frac{3}{4}" \times 6'1\frac{1}{2}"$
2 End Rails	$3\frac{3}{4}" \times 34\frac{1}{2}"$
2 End Cross Braces	$3\frac{3}{4}" \times 34\frac{1}{2}"$
4 Leg Stretchers (these may be either tapered or straight at the ends)	$3\frac{3}{4}" \times 28\frac{1}{2}"$
8 Legs ($\frac{3}{4}"$ plywood)	cut as shown
2" Finishing Nails	1 lb.
16 Flathead Wood Screws	$1\frac{1}{4}"$ No. 8
No. 8 Upholstery Tacks	2 Boxes
3" Upholstery Webbing	46 Yards
or:	
2" Upholstery Webbing	60 Yards

6-foot $1\frac{1}{2}$ -inch top rails together. Pay special attention to the way in which they are joined: nail through the top areas of the side rails. Notice that the pieces are not flush—the top rails are recessed from each end of the side rails by $\frac{3}{4}$ inch. You can form this joint easily by butting a piece of your lumber against the top rail before nailing, as shown in photo 3.

Now nail the two completed leg assemblies to the assembled framework, composed of the top and side rails. The leg

assemblies will slide in place to form very strong joints at the corners of the frame.

At this stage, add both end cross braces so that their cutouts engage and further strengthen the corner legs. The frame must, of course, be inverted during this operation.

You are now ready to add the two pairs of assembled center legs. Each of these is positioned 25 inches from both ends of the frame. They are attached by driving nails through the side and top rails into each of

1. After boring holes and countersinks, attach the four corner legs to both of the end rails.

2. Screw leg stretchers to both sides of center legs. Stretcher ends may be straight or tapered.





3. Now nail top rails to side rails. Piece of $\frac{3}{4}$ -inch scrap, left, is used to determine recess.



4. Drive nails into these members at about 8-inch intervals. Pine is used for all the rail elements.

the four center legs. This completes assembly.

Sink all nailheads into the wood about $\frac{1}{8}$ inch with a nail punch. Fill all cracks and holes with composition wood filler. Round off all sharp corners and edges with sandpaper, then sand the entire unit and finish as desired.

Webbing: Either two- or three-inch-wide webbing may be used for this piece. Three-inch webbing of professional quality is obtainable at upholsterers' supply

shops, and was used for the unit shown. For your crosswise strips, you'll need seventeen 54-inch-long strips of three-inch webbing, or twenty-three strips of two-inch webbing of the same length. Distribute the strips evenly along the length of the frame. Pull each strip tightly across the frame and tack the opposite side in the same manner. Leave enough webbing so that you can fold under both ends for extra strength.

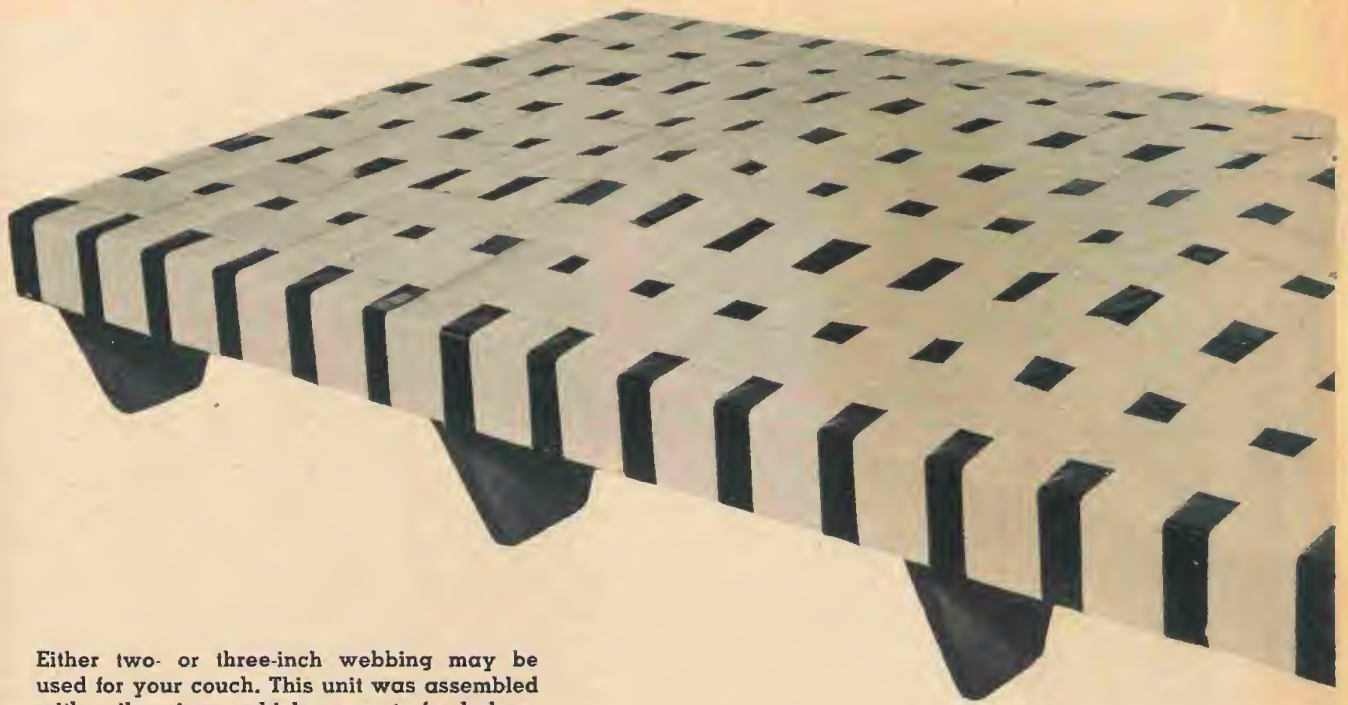
Lengthwise webbing: Cut eight strips of

5. Install end leg assemblies. As legs were attached $\frac{3}{4}$ inch from rail edges, strong joints result.



6. Fasten leg assemblies by nailing through side rails into the end rails and into legs themselves.





Either two- or three-inch webbing may be used for your couch. This unit was assembled with coil springs, which accounts for bulges.

three-inch webbing to 90-inch lengths (ten strips of two-inch webbing will be required). Distribute them evenly along the width of the frame and tack one doubled end of each strip to the inside of one width of the frame. If desired, you can extend the webbing to the bottom of the frame, as

shown in the photo above. Interlace these strips with those already attached, pull tightly, and tack the ends to the opposite end of the frame.

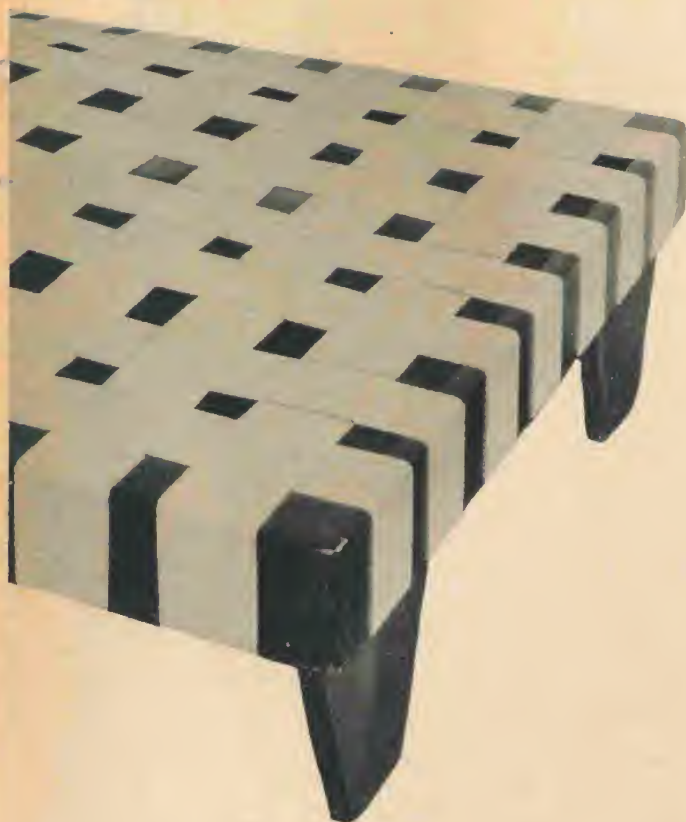
Webbing tools and techniques are illustrated in the chapter entitled Working with Webbing, pages 124-127. •



7. Position both 34½-inch-long end braces. The ¾x4½-inch notches at the ends engage corner legs.



8. Apply glue to both surfaces, then nail or screw end braces to undersides of both top rails.



11. The center leg assemblies are first nailed through side rails, then through the top rails.



9. Now you're ready to add center leg assemblies. Each should be 25 inches from its end of the frame.



10. When position has been determined, pencil in areas of all four legs on both sides of the frame.

project 19

end table

Open on two sides to create instantly accessible storage space, this unit can also be used to house your high fidelity radio tuner and record player.

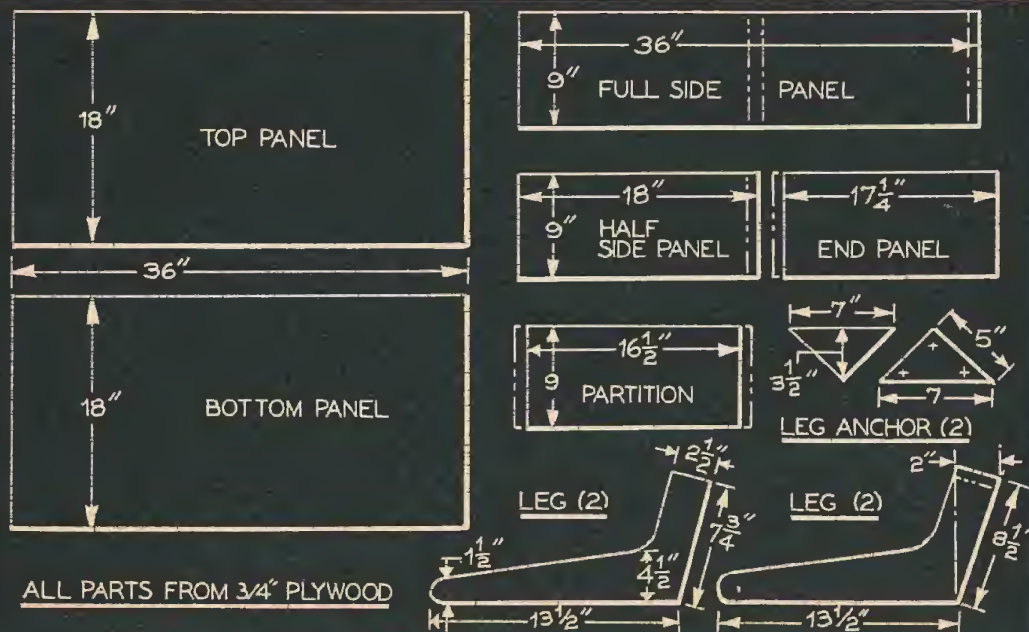
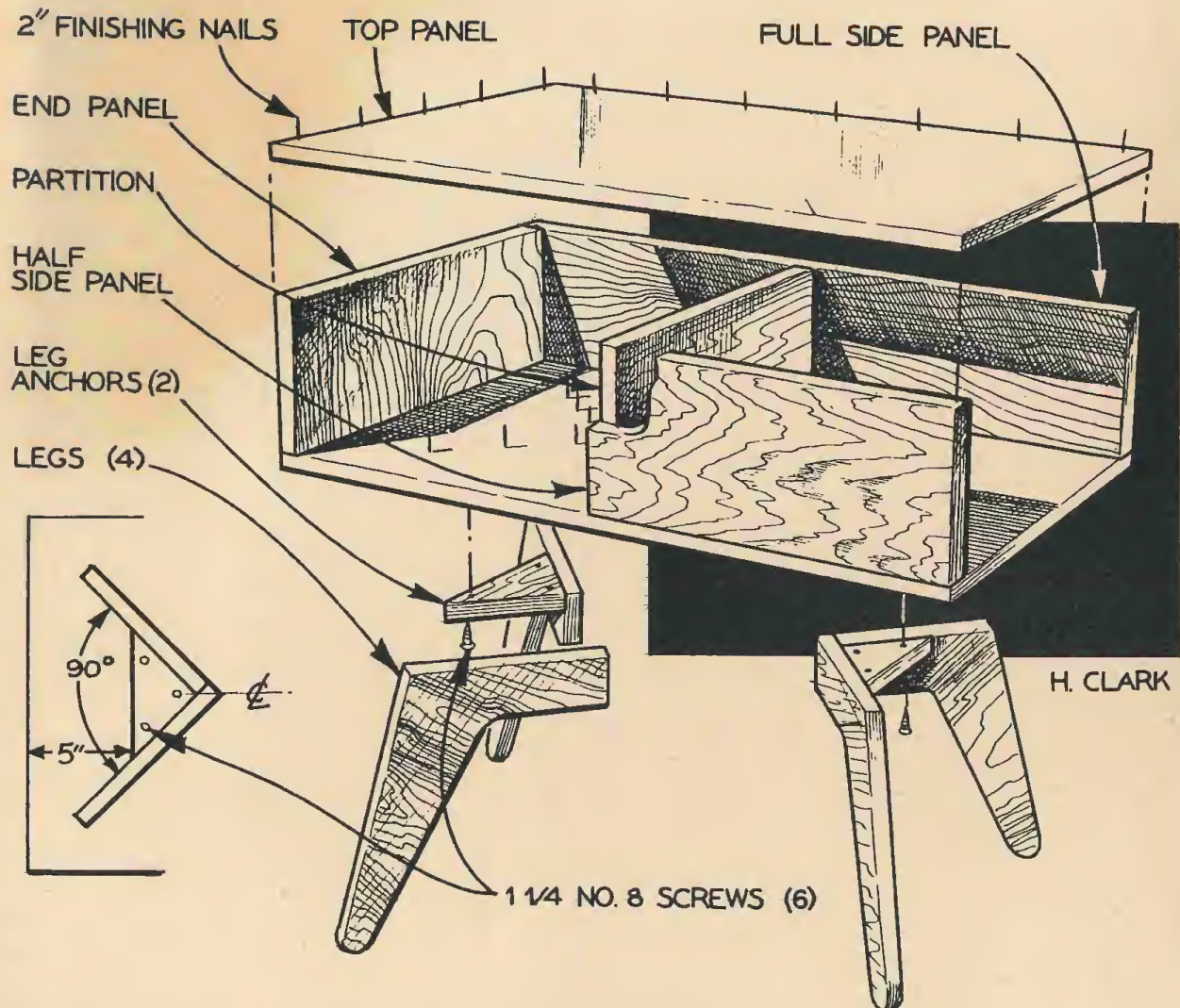


Photo by Midori

INCORPORATING plenty of space for records, books and magazines, this good-looking design also offers an extra dividend: two of them placed side by side combine to form a corner table.

Assembly: After cutting all pieces to size, trace outlines of the two triangles on the underside of the bottom panel and attach them with glue and three 1¼-inch No. 8 screws per triangle. Note that their apexes point toward each other, and that the base of each triangle is 5 inches from the edge of the panel.

Lay the bottom panel on the floor, triangles up. Place all upright elements in their proper position, and pencil in their outlines. This operation merely indicates where to drive your nails when you begin assembly. Now repeat this operation with the top panel. The top panel will be in its normal position, and the other elements are placed on top of it. Make your pencil





BILL OF MATERIALS

Note: All lumber is $\frac{3}{4}$ " plywood.

1 Top	18"x36"
1 Bottom	18"x36"
1 Full Side Panel	9"x36"
1 Half Side Panel	9"x18"
1 End Panel	9"x17 $\frac{1}{4}$ "
1 Partition	9"x16 $\frac{1}{2}$ "
2 Legs, 7 $\frac{3}{4}$ " along tops	cut as shown
2 Legs, 8 $\frac{1}{2}$ " along tops	cut as shown
2 Triangles	cut as shown
2" Finishing Nails	1 lb.
6 Flathead Wood Screws	1 $\frac{1}{4}$ " No. 8

Top and bottom panels are identical. One set of legs is longer along the top than the other pair, so that they may be assembled around the triangles as shown in the diagrams. Note from the two views of the completed table, page 110, that either end may be left open, and that the half side panel may be shifted to either side, depending on the area or corner in which you intend to use the piece.

lines very lightly, as heavy marks are very difficult to remove from wood.

Now attach your legs to the bottom panel. Note that the legs are butted at their ends, which is the reason why two of the legs are $\frac{3}{4}$ inch longer along their top surfaces than the other pair.

Put aside your completed leg-bottom assembly, and attach the top to all upright members with glue and 2-inch finishing nails. When this is completed, invert the assembled top and sides on your floor, and attach the leg-bottom assembly in similar

manner as the top. Make sure your upright elements are perpendicular to both the top and bottom panels before attaching them. This completes assembly.

You can adapt this table for hi-fi components. A record player can be installed with drawer slides, which enable you to pull out the unit to place or remove records.

Sink all nailheads about $\frac{1}{8}$ inch into the wood with a nail punch. Fill all holes or cracks with composition wood filler. Sand well, especially the edges, and finish as desired. •

Attach both triangles to underside of bottom panel with glue and 1¼-inch flathead screws. Base of each triangle is 5 inches from respective end.



With bottom in same position, pencil in outlines of all upright members. These markings will indicate areas through which elements are nailed.



Repeat this operation with the top panel in its normal position. Make lines very lightly here. Be sure elements are lined up as they were before.

Legs are now fastened to the triangles. First attach one leg that measures 7¾ inches across the top. Use some glue and 2-inch finishing nails.



Opposite leg, ¾ inch longer at top than its mate, is then butted against triangle, and overlaps attached leg. Below: Both completed leg assemblies.

Attach top to all upright members, again using glue and nails. Last step is to invert assembled top and sides, then add the leg-bottom structure.



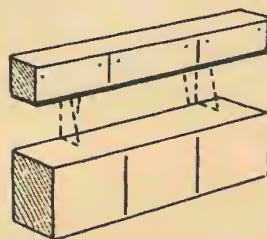
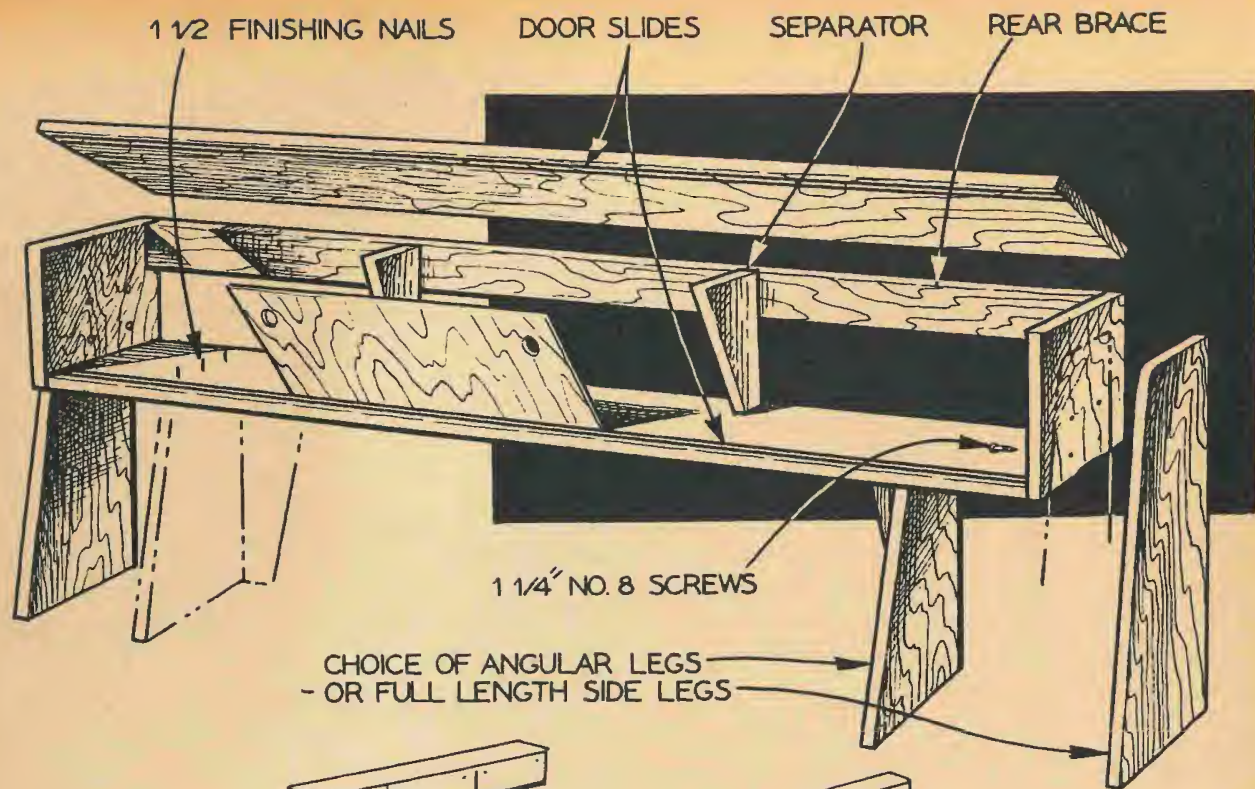


As raised storage shelf, unit is mounted atop the 72-inch-long Sliding-Door Cabinet (Project 11).

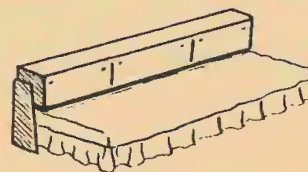
sideboard - bed cabinet

Build this piece as a back rest and storage cabinet for a couch, as a raised or floor-level storage shelf, or omit legs and mount it on a wall.

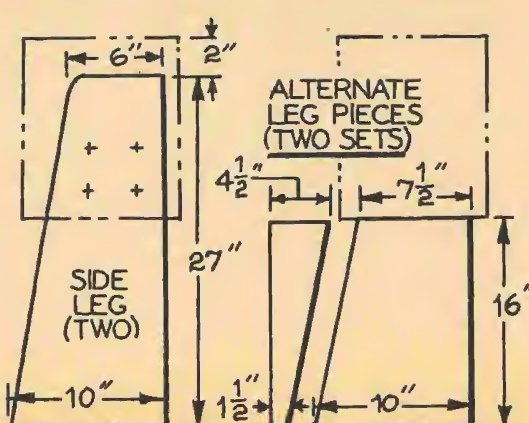
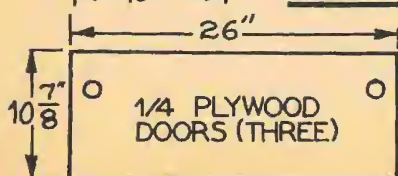
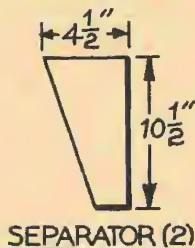
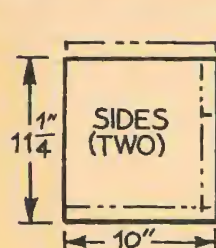
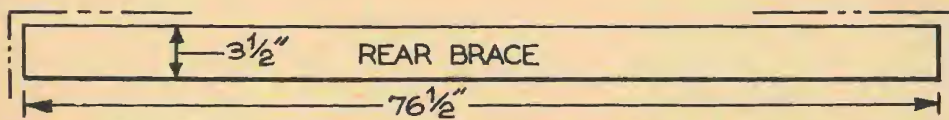
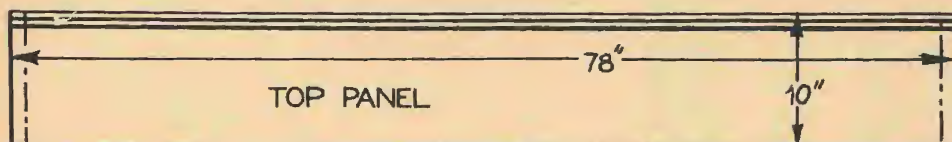
THE flexible design of this handsome piece enables you to use it in several ways, depending on your own furnishing demands: (1) it can be built as a snug floor cabinet that can be used in conjunction with a studio couch or bed (refer to the top photo on page 14 for a view of the unit in this capacity). The bed slides under the unit and may be drawn out at night. (2) By substituting an alternate leg assembly for the two side legs employed in the Bed Cabinet, you can either place the cabinet on the floor, where it will serve as a convenient sideboard, or else set it on any large cabinet; it was designed with the Sliding-Door Cabinet (Project 11) in mind. (3) You can



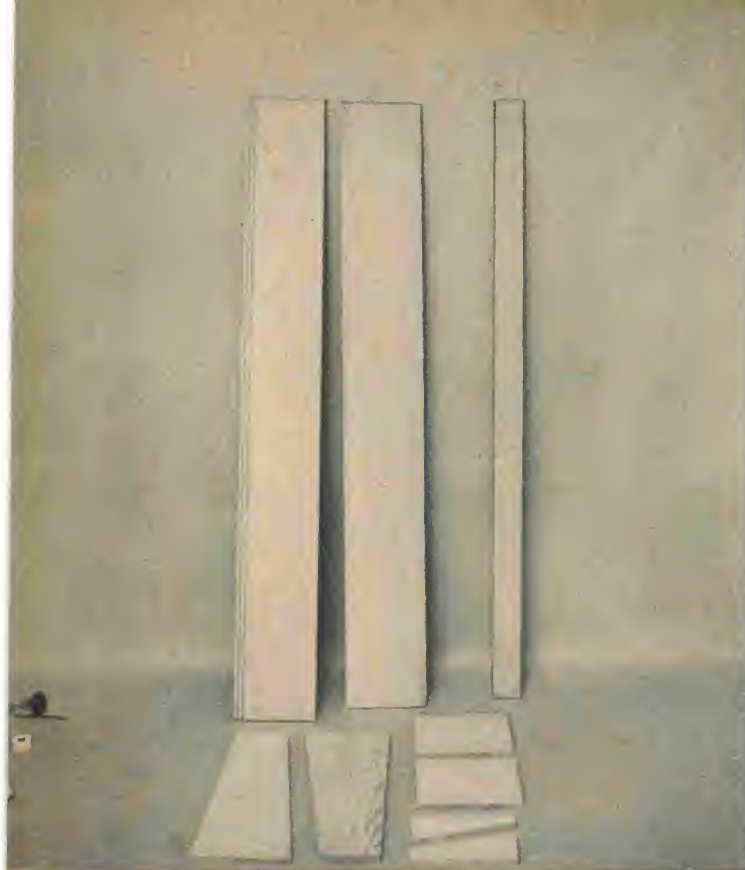
AS WALL CABINET
WITH OR MINUS LEGS



AS USED OVER COUCH
OR DAY BED UNIT



ALL PARTS
FROM 3/4"
PLYWOOD
EXCEPT DOORS



BILL OF MATERIALS

Note: All lumber, unless otherwise specified, is $\frac{3}{4}$ " plywood.

1 Top	10"x78"
1 Bottom	10"x76 $\frac{1}{2}$ "
2 Sides	10"x11 $\frac{1}{4}$ "
1 Brace	3 $\frac{1}{2}$ "x76 $\frac{1}{2}$ "
2 Separators	cut as shown
2 Side Legs (Bed Cabinet only)	cut as shown
4 Leg Elements (Sideboard only)	cut as shown
3 Sliding Doors ($\frac{1}{4}$ " plywood)	10 $\frac{7}{8}$ "x26"
1 $\frac{1}{2}$ " Finishing Nails	$\frac{1}{2}$ lb.
Glue	
8 Flathead Wood Screws	1 $\frac{1}{4}$ " No. 8



Assembly photos are for Bed Cabinet. Add 1 inch to bed height; indicate this dimension on legs.

make it without either type of leg assembly, and mount it right on your wall.

You'll note that the top and bottom panel each have two grooves to accept the sliding doors. Note, also, that the top grooves are deeper than those on the bottom; this permits installation of the doors after completion of the entire unit. If you have these



Nail top panel to both sides. Notice that top extends to outside edges of 10x11 $\frac{1}{4}$ -inch side pieces.

grooves cut at a lumber yard, they'll probably be cut to extend to the ends of both panels, which means that you'll have to plug them up later on. If you have your own circular saw, however, you'll be able to make "blind" grooves that will not extend to the very ends of the panels.

The assembly photographs shown concern



The bottom is now nailed between the side members. Before attaching it, however, make sure that both sets of grooves face front of the cabinet.



Rear base is attached at the bottom of Bed Cabinet and Sideboard. If you're making a Wall Cabinet, install it at the top. (See text reference, page 118.)



Brace is first nailed through both sides with 1½-inch finishing nails. Screws may also be used.



After the brace is attached to both sides, invert cabinet frame and fasten it to the bottom panel.

construction of the Bed Cabinet. Any departures in construction procedure that are necessary for building the Sideboard will be treated in the text.

Assembly: First cut all elements to size. Since all beds vary somewhat in height, you'll have to find the point at which the Bed Cabinet can be attached to the side

legs. This is done by measuring the height of your bed (including mattress and covers). Add 1 inch to this dimension and mark lines at this height to both side legs. Make sure your legs are in the correct position when you pencil in these marks—the tapered edges face up. The marks indicate the bottom level of the cabinet, and



With frame inverted, install both separators so that they divide cabinet into three compartments.



Separators are first nailed through the top. Hammer lightly, as any marks here will be visible.



Finish attaching separators by nailing through rear brace, bottom. Notice direction of taper.



Final step: cabinet is attached to legs so that its bottom coincides with lines made previously.

this procedure will enable you to slide the bed under the cabinet.

(Note: If you are building the Sideboard, glue and nail the cabinet bottom to the assembled elements of both legs. Position the leg assemblies 9 inches from each end.)

The following sequence will apply, regardless of whether you're building the Sideboard, Wall or Bed Cabinet. Glue and nail the top to the sides. Notice that the

top panel extends over the sides of your top piece. Now insert the bottom, which is positioned *between* the side members. You now have a completed rectangular box-like frame.

Install the $3\frac{1}{2} \times 76\frac{1}{2}$ -inch rear brace. If you're building the Wall Cabinet, put the brace at the top, as shown in the diagram on page 115. Thus, it is in position to act as the member by which you can mount your cabinet. But if you're making either



Left: Install sliding door by lifting into top groove first, and then letting it drop into the bottom groove. Greater depth of top grooves makes this possible. Always apply equal coats of finish to both sides of sliding doors to minimize warping.



Photo by Bill Jackson

The only structural difference between the Sideboard (above) and the Bed Cabinet concerns type of leg assembly used for each. For a view of the Bed Cabinet in use, refer to the photo on page 14.

the Sideboard or Bed Cabinet, put the brace at the bottom, as shown in the assembly photos. It will thereby prevent sag and will enable the sliding doors to move freely.

Attach your two tapered separators, nailing through the brace, bottom, and top. These should be positioned so that they divide the cabinet into three equal compartments.

(Note: If you're building the Bed Cabinet, bore four holes through the sides, and screw the cabinet to both side legs, driving your screws from the inside of the cabinet. Do not glue the side legs, so that the height of the Bed Cabinet can be changed in the future, if desired. Attach the legs so that they clear your baseboard,

permitting the cabinet to set flush against the wall; see sketch, page 115.)

Sink all nailheads $\frac{1}{8}$ inch into the wood with a punch or nail set. Fill holes and cracks with composition wood filler. You can plug the ends of the slide grooves with small pieces of wood that have been cut to size.

Finish your unit as desired. Finish both faces of the sliding doors equally to avoid warping. If you apply two coats to the fronts, apply the same number of coats to the back. Rub a candle over the sliding edges of each sliding door to make them glide more easily. Install sliding doors by lifting them into the top groove first, and then letting them drop in the bottom groove. •



Photo by Bill Jackson

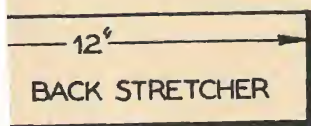
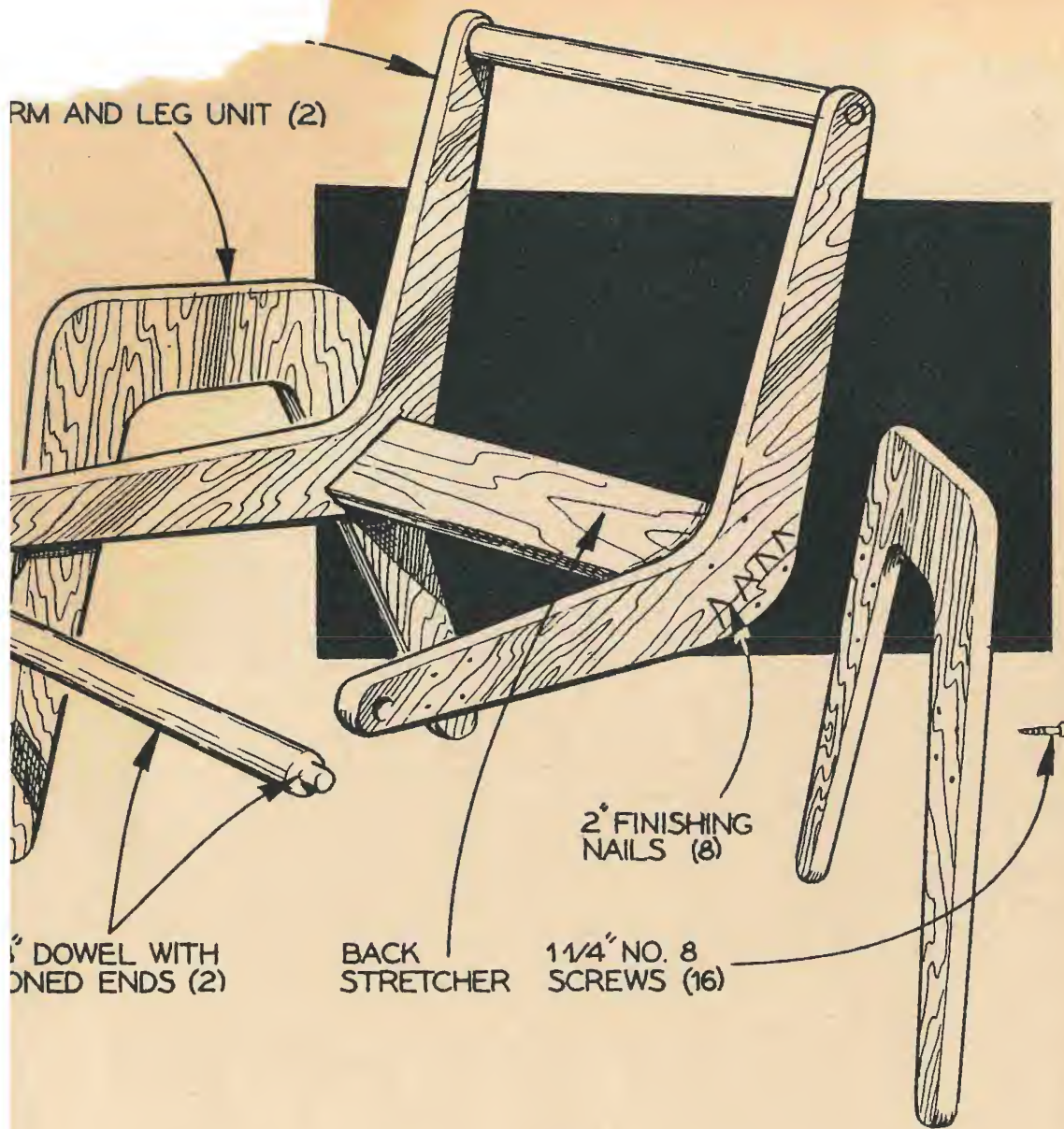
child's chair

Delight your child by making him a chair of his very own—one that embodies a prime requisite for juvenile furniture: durability.

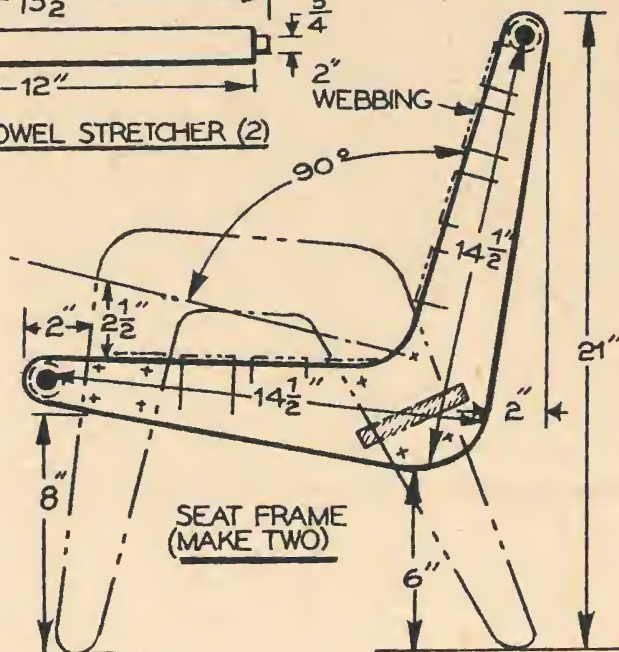
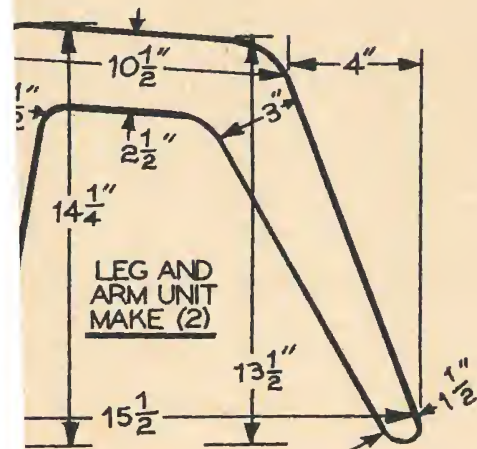
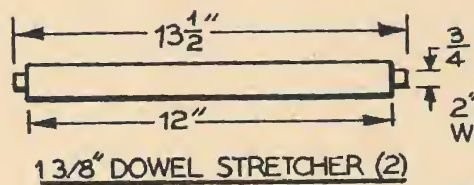
FURNITURE designed for kids must be able to absorb lots of wear and punishment. With this idea in mind, the chair shown on these pages evolved. You can probably make it even more rugged by substituting screws where nails are indicated, although nails have proven sufficiently strong.

Assembly: Cut all pieces to the sizes indicated on the diagrams and bill of materials. Don't forget to bore $\frac{3}{4}$ -inch holes where indicated on both seat frames. First step in assembly is to screw one seat to one arm-and-leg unit with glue and $1\frac{1}{4}$ -inch No. 8 flathead wood screws. Use four screws per joint, and note that the frames in both instances are screwed to the inside surfaces of the arm-and-leg

ARM AND LEG UNIT (2)



PARTS 3/4" PLYWOOD





BILL OF MATERIALS

Note: All lumber, unless otherwise indicated, is $\frac{3}{4}$ " plywood.

2 Seat Frames, with $\frac{3}{4}$ " holes . . . cut a

2 Arm-and-Leg Units cut a

1 Rear Stretcher

2 Dowel Stretchers ($1\frac{1}{8}$ " diam.) . $13\frac{1}{2}$ "

16 Flathead Wood Screws $1\frac{1}{4}$ "

2" Finishing Nails

No. 6 Upholstery Tacks

Glue

2" Upholstery Webbing



When component parts are cut out, first step is to bore $\frac{3}{4}$ -inch holes through the ends of the seat frames. These will accept the dowel tenons.



This view indicates the position of the 4x12 rear stretcher, which is attached at a 45-degree angle to the seat frames. (Leg was removed

units. Both side elements are now assembled.

Dab some glue into the holes of one side assembly, and insert both dowels; repeat with the opposite side. This completes the basic frame. Now glue and nail (or screw) the 4x12-inch back stretcher in place. (You might not want to cut this member to length until the sides are assembled with the dowels.) Your frame is now finished.

Tie the seat frames together with cord, using a wooden clothes hanger or a screw-driver as a lever. (This procedure is shown

on page 57.) Allow at least eight hours for the glue to dry before removing string.

After the glue has dried completely or cut off projecting dowel tenons, required, so that they are flush with the faces of the seat frames. Sink all nailheads about $\frac{1}{8}$ inch with a nail puller or set. To make sure that the dowels not eventually become loose, drive a finishing nail into each end. See photo on page 91 for this procedure. Fill all joints with composition wood filler. Sand



Above: Rectangular Coffee Table (Project 1) serves as a large play surface when used in conjunction with these chairs, which require little floor area.

Courtesy N. Y. C. Housing Authority

Left: Horizontal strips of webbing are tacked down first. Vertical strips are attached to underside of top dowel, interwoven and fastened to lower dowel.

especially all edges, then finish the chair to fit in with the color scheme of your child's room.

Webbing: Tack horizontal webbing in place as shown in the photographs. Webbing should be attached to the underside of the seat frames where possible. The first horizontal strip will have to be tacked down to the top surfaces of both seat frames. All horizontal strips should be pulled as tightly as possible. Double the ends for strength, as indicated in the following chapter, *Working with Webbing*.

Begin tacking the vertical strips to the underside of the top dowel stretcher. Interweave webbing with the horizontal strips, then tack to the underside of the bottom stretcher. Vertical webbing should not be pulled too tightly, as an unsightly bulge will result.

Some striking effects can be easily achieved by an imaginative webbing job. For example, you can use strips of one color for the horizontals, and another color for the verticals. Also, the frame can be painted to complement the webbing. •

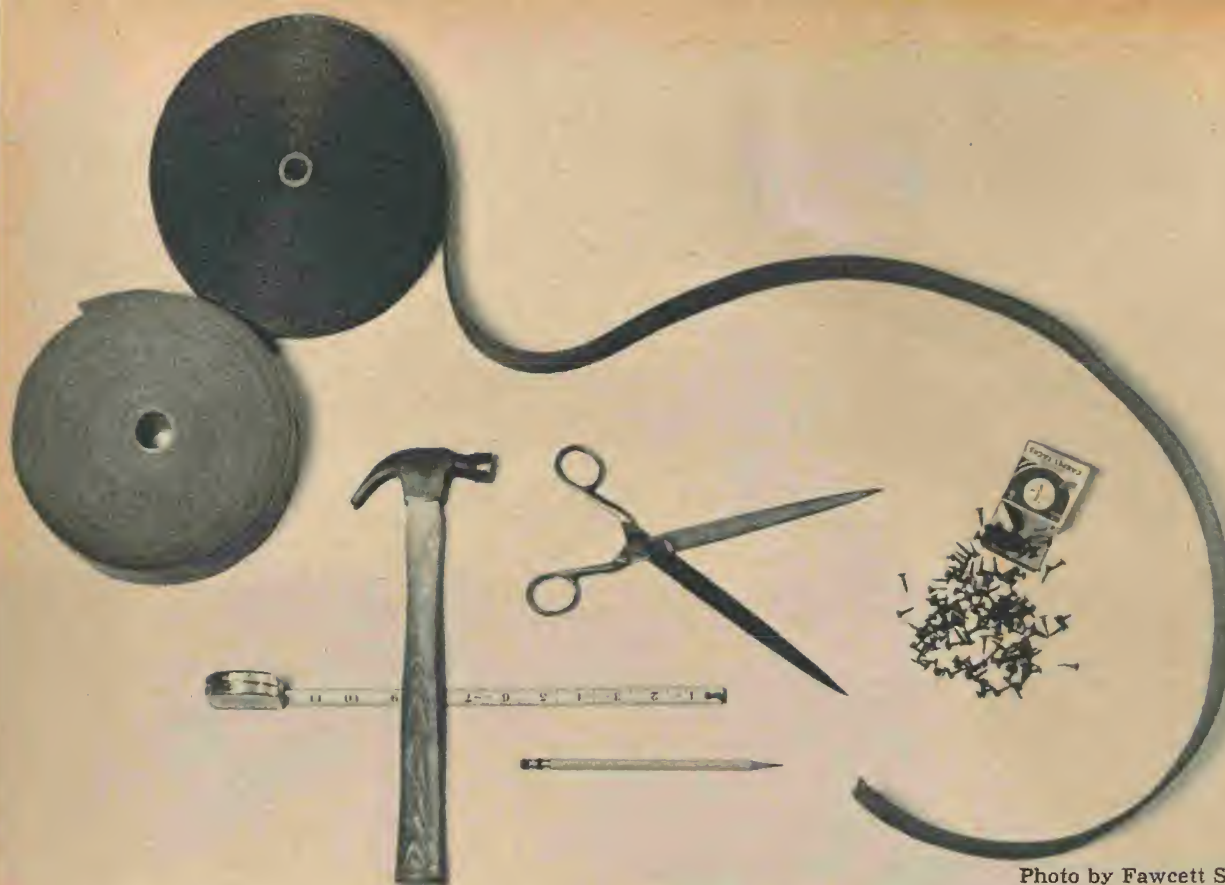


Photo by Fawcett Studio

Shown above and at left are the tools and materials you'll need to web any chair. Two types of webbing are included: plastic (top) and cloth.



working with webbing

If you've ever swung a tack hammer, you can do an excellent webbing job. The tools are basic, the skills elemental, the results rewarding.

THE photos on these pages clearly illustrate every step of any webbing operation. Of course, your chair should be painted or varnished before you tack on your webbing.

Two-inch-wide webbing is made in plastic and cotton, both of which may be obtained in a great variety of colors. Both types have respective advantages and drawbacks. Plastic tape will outlast the cotton variety, but it is more difficult to apply, costlier, and does not look as well on interior pieces. Plastic tape also has a tendency to shrink if left in the sun, and has been known to collapse chair frames after a few hours of exposure to a hot sun.

Cotton webbing in six colors is available from Klaus Grabe, 719 Lexington Avenue, New York City. •



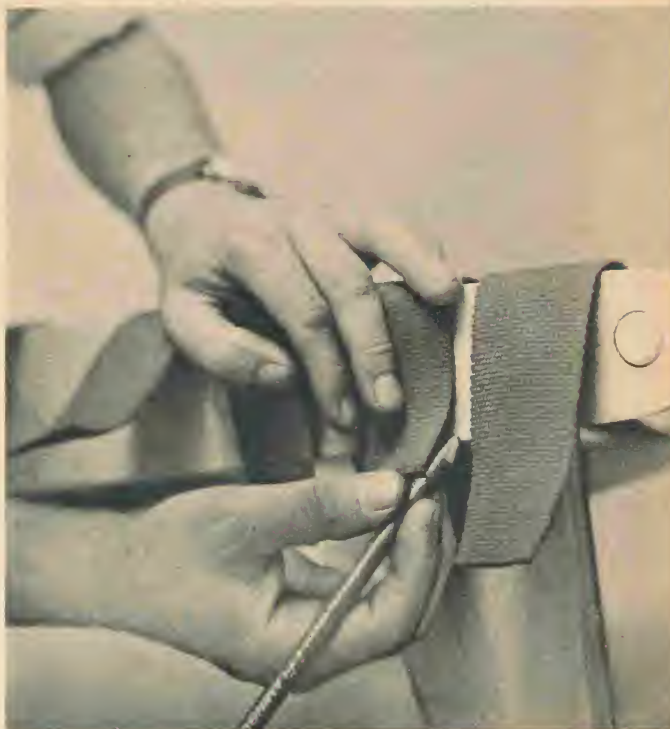
Since webbing is available in many shades and colors, choose one that will blend with your decor. First step in webbing is to make rough estimate.



Don't forget to allow for doubled ends at both extremities of webbing, and always begin with horizontals. Cut off number of strips required.



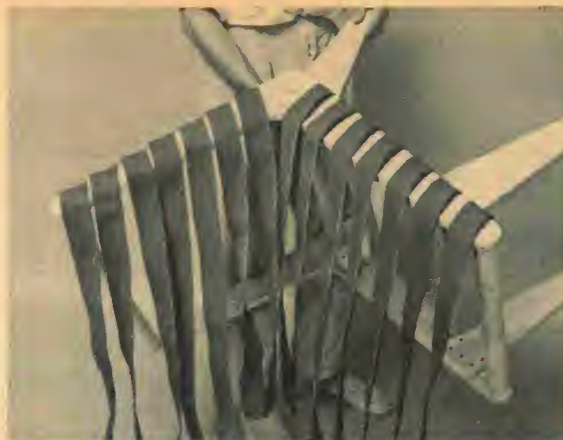
Lay your strips across seat area, letting them overhang equally on both sides. Living Room Chair (Project 9) utilizes seven seat strips here.



You can choose either open or closed weave, depending on your own taste. Mark off intervals at which you want to space the strips. (Turn page.)



Invert the chair, double the end of the strip, and tack in place with three tacks. Note that webbing tape is fastened to bottom of side assembly.



Repeat this operation until all of the horizontal strips have been firmly tacked to one side of the chair frame. Be especially neat along back edges.



Now you're ready to begin tacking down the loose ends. Cut off any excess tape, but again remember to leave enough to tuck under for a doubled end.



Make the fold so that it is equal to the thickness of your wood— $\frac{3}{4}$ inch in all instances. Crease it firmly between your thumb and forefinger.

Pull the strip as tightly as you can with an ordinary pair of pliers. These horizontal pieces of webbing should be as firm as you can get them.

Continue until all of the horizontal strips are fastened on both ends. Note how tautly the strips have been installed across the entire seat area.





Now you're ready for the long, vertical pieces. Cut to size and, again doubling your ends, tack them to the underside of the top dowel stretcher.



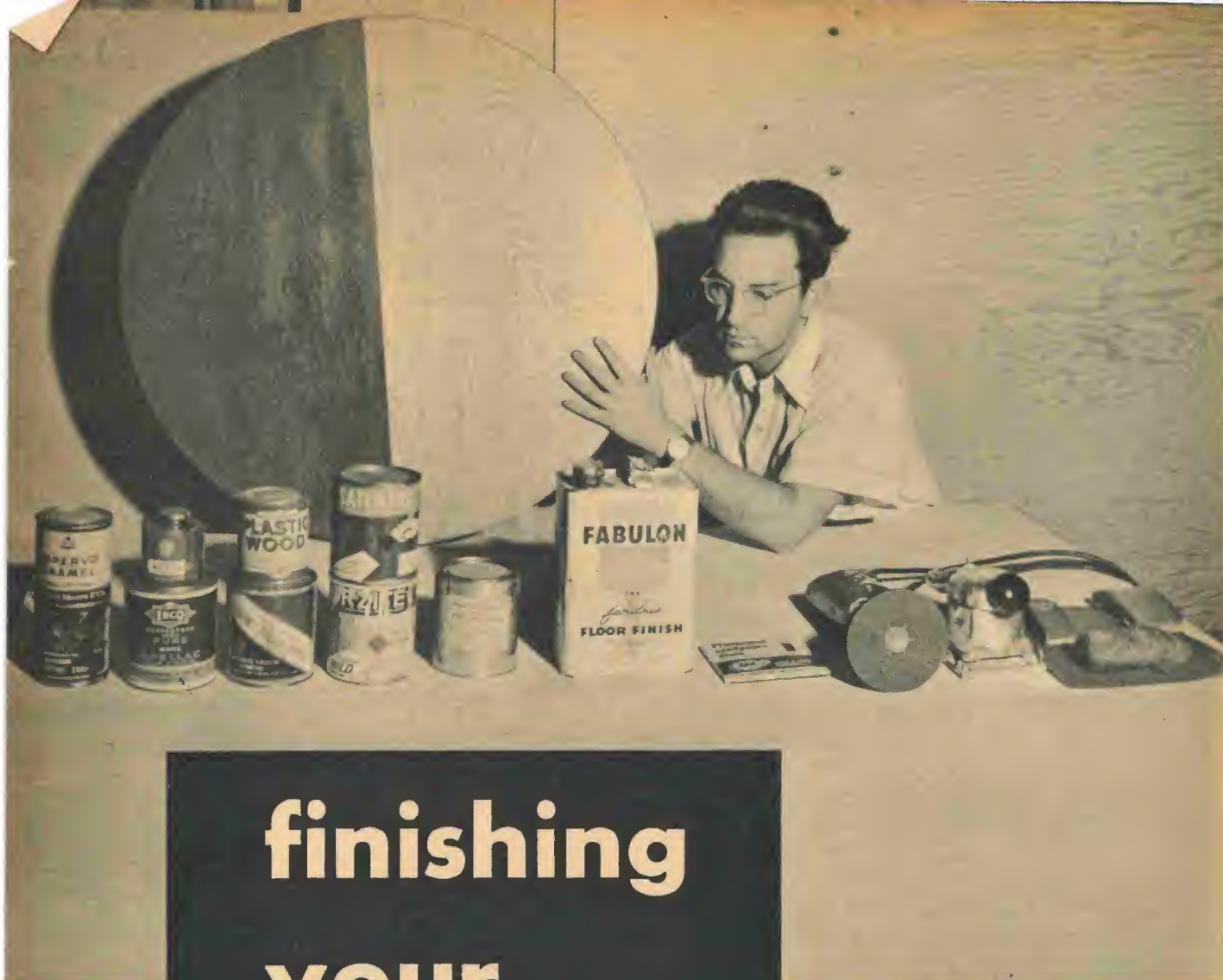
When they are fastened at the top, interweave them through the horizontal piece. Seven vertical strips are employed for this particular chair.



Vertical strips should not be stretched too tightly, or an unsightly bulge will result. However, they should be firmly placed and without any slack.



After cutting off the excess and doubling your ends, tack the lower ends to the front dowel stretcher. This completes the entire webbing operation.



finishing your furniture

Photos by Hal Kelly

First step in finishing is to prepare surfaces. Surface cracks or knotholes must be carefully filled.



Proud of your craftsmanship? Of course—but don't spoil it with a carelessly applied finish, for these steps spell the ultimate appearance of your units.

TOO often an otherwise perfect project is ruined by a hasty or careless finishing job. This is unfortunate, because the final appearance of your furniture depends, of course, on this important operation. Your careful selection of wood and painstaking workmanship can be nullified very quickly by a slipshod finish which, instead of enhancing the project, will make it look shoddy and badly made. Conversely, a skillful finishing job can perform wonders in hiding many minor construction faults. Therefore, treat finishing as part and parcel of your other shop work, not as a bothersome afterthought.

Finishing begins with preparing your surfaces. This is especially applicable to the cheaper grades of plywood, which may have faulty veneers or bad edges. Hollows or knotholes in plywood can easily be filled with many commercially available composition wood fillers, like Plastic Wood, Wood Dough, Savogran, and others. Force your fillers into place with a flexible putty knife; do not tamp your filler flush with your surface, but make a small mound over the areas to be patched. Most composition wood fillers have a tendency to shrink as they dry; this mound will compensate for any shrinkage that may occur.

Let your wood filler dry thoroughly before you attempt to sand it. The directions on the container will indicate how long this should be. After it is thoroughly dry, sand it down by hand or with a power sander. If sanded flush while still moist, most fillers will continue to shrink, and the result will be a small depression over the patched area, which will only mean more patching.

For purposes of illustration the top of the Round Coffee Table (Project 2) was finished in two different ways: one-half of the

With a putty knife apply composition wood filler. Do not force the filler flush with surface, but make small mound over hole to allow for shrinkage.

When filler has dried completely (refer to container for exact time required) sand it flush with a sanding block or with an electric sander.





Upper left: When cutting through plywood panels, you may discover imperfections like this. Since many edges will be visible, these should be filled, too.

Above: If the indentation is very deep, apply your composition filler in a series of layers; wait for each layer to dry before applying your subsequent ones.

Left: After entire patch has dried, sand down the edge. An oscillating or finishing sander like this can also be used to smooth down rough spots in your finish.



disk was covered with a clear brushing lacquer, the other half with an undercoat preparatory to an enamel paint job. The difference in qualities between these basic types of finishes is visible in several of the photographs. Paint, of course, covers the defects, but also the grain.

As was mentioned in the first chapter, fir plywood does not have an unusually attractive grain for natural finishes. But if you do use fir and don't want to paint it, you can still obtain an attractive "pickled" effect by using white Firzite. After the surface has been prepared, apply a coat of white Firzite reduced about twenty per cent with turpentine or mineral spirits. Allow it to set for a few minutes, then wipe it

off *against* the grain with a cloth. The Firzite remaining on your plywood will have become deposited in the grain pattern.

After it is completely dry (the manufacturer recommends that you allow twenty-four hours' drying time), apply several coats of clear finish—Satinlac, varnish, lacquer, etc. After each coat is dry, go over it with steel wool, and your project will have a very handsome "blond" or "pickled" finish. (Refer to the photograph on page 132.)

White Firzite may also be used as a sealing coat before application of enamel. After it has been brushed on, allow it to dry overnight, then sand it. Apply a coat of enamel undercoat, sand when dry, and complete

Right: Typical finishing operation for Round Coffee Table. Round off sharp edges around circumference of top disk.



One-half of the disk was covered with a clear brushing lacquer. Note how grain is emphasized by clear finishes.



Other half was covered with flat paint, preparatory to application of enamel. Paint will, of course, hide any blemishes.





Left: To achieve a "pickled" finish, white Firzite was applied, then wiped off across the grain after setting for a few minutes.

Below: After the Firzite has dried thoroughly, apply coat of clear varnish or Satinlac, which can be either sprayed or brushed on.





Left: When first coat of finish is dry, go over it lightly with steel wool. Dust off, apply second coat; finally, wax entire piece, and buff it down.

Below: Effective and attractive means of hiding plywood edge is to attach splines of stock lumber, in this case ash. Miter the corners for neatness.

your finish with one or two coats of flat, eggshell or gloss enamel. The Firzite, when permitted to fully penetrate, will seal all hairline checks and will cover the grain completely.

Shellac, incidentally, is not a good finish for surfaces that will be subject to heavy wear and usage, like table tops, cabinet tops, and so on. The same applies for wax, although it can be used to advantage on the chair projects, where the wooden elements are unlikely to come in contact with hard wear. Many excellent paste waxes are available. If you have a disk sander, get yourself a lamb's wool buffing bonnet to polish your final coat.

On some projects you may want to hide the plywood edges. A very simple way of doing this is to attach thin splines of stock lumber around the perimeter of your panel. These may be either butted or mitered at the edges, but a miter is recommended. You can get a decent miter joint for such a small area even on the simplest miter box, if you're working with hand tools. With a circular saw, of course, there's no problem at all. Cut your strips to size, then nail your brads at about 6 inch intervals. Stagger them somewhat to minimize the possibility of splitting your strips. Apply glue to your plywood edges, position one strip, and nail it in place. Do not drive the brad completely home, but let it extend about $\frac{1}{8}$ inch. You can then use a nail punch to drive it below the surface of the wood.

When all your strips have been installed, round off their top and bottom edges, and the corner miter. This stripping method will result in a very attractive panel wherever used. You can get unusually appealing results by contrasting the strips with the plywood veneer, although this is not absolutely necessary. For example, in the photo series of this operation, ash strips



Above: Following procedure you used when you assembled the units, do not hammer heavily. Instead, sink brads under surface of wood.



After the splines have been attached, fill brad countersinks with composition wood filler. Sand surfaces, paying special attention to corners.



Application of finish binds splines and plywood together visually. To obtain a striking effect, use a dark wood, like walnut, for your splines.



Go over your first coat with steel wool, then apply second coat. These splines extend below the bottom edge of plywood to suggest a massive panel.



A disk sander of any size is excellent for smoothing all of your rounded or contoured elements like this leg for the Rectangular Coffee Table (Project 1).

Still another way of treating exposed plywood edges is simply to paint the edge, and to finish both sides with clear varnish or lacquer.

were used with fir plywood, and the results were more than gratifying.

Still another way to hide your plywood edge is simply to paint it and to finish the remainder of the element or project in natural. This is indicated in the photo of one leg from Rectangular Coffee Table (Project 1). Notice that the sides of the leg have been lacquered, but the outside edge, which will be visible after assembly, has been painted with enamel. This requires a little extra work, but it's worth it. Refer also to the finish on the Chest of Drawers, page 30.

Sometimes you may work with a wood





If you want to accentuate the grain in your wood, oil or water stains may be used. However, make a series of tests on unexposed, well-sanded areas until you get the shade or tone you want. Colors of stains are deceptive immediately after application, so give them a chance to dry before making your decision.

which has an attractive but very light grain pattern. You may want to accentuate this grain. While it is true that any natural finish will "drag out" the grain somewhat, stains may be employed to bring it out even more. For our purposes, let's consider the two most common types: oil stains and water stains.

Oil stains, which are available in many shades, can be applied with a brush. They have a tendency to bleed through varnish or lacquer, and it is therefore recommended that after application they be sealed. A wash coat of shellac is good for

this purpose. End grain, which is especially absorptive, will darken considerably, but with plywood, this may be desirable. If, however, you do not want the edges to darken excessively, wipe them immediately after applying your stain.

Water stains are inexpensive to use and nonfading. However, they will raise the grain of the wood. This can be dealt with either by first sponging your wood with warm water, then sanding after the stain has dried, or by simply applying the stain first and then, when the surface has dried, applying a thin coat of shellac to give the



Once you've established the proper mix, apply water stain with cotton waste. Any stain applied to plywood edges will darken them considerably.



Water stain will raise the grain of your wood, so after it has dried, sand down all surfaces. Very thin coat of shellac will stiffen fibers.

fibers the stiffness they will require if the surfaces are to be sanded properly.

Water stain can be applied with cotton waste. Here again, your end grain will tend to soak up more stain than the surfaces, so dampen it first. If the plywood edges are *not* going to be covered with strips, you might want to apply the stain to the edges while they are dry. This will darken them considerably, and will result in an attractive pattern.

Stains are deceptive in that they lighten in shade as they dry, so do a little experimenting before actually staining any of your furniture. Work with some scrap of the same material employed in the project to be finished, or apply stain to a well-sanded, clean area that will not be visible. Apply the stain, and *let it dry completely* before judging definitely whether or not it is the shade you want. To lighten a water stain, simply add more water. To darken, add more stain solution.

Application of water stain to the Convertible Table (Project 7) is illustrated in a series of photos. Notice the test applications which were applied to the underside of the top piece. The end grain was not dampened; instead, the stain was applied full-strength and was allowed to seep into the wood pores. After the stain was completely dry, the entire table was sanded with No. 00 sandpaper and two coats of Fabulon were applied, steel-wooled between coats.

Fabulon, varnish, brushing lacquer, and finishes of this type should be applied in a dust-free room, if possible. All sanding dust should, of course, be removed (a vacuum cleaner is excellent for this). Ideally, a spray gun should be used, but brushes may be employed satisfactorily. Lacquer should be "flowed on" with a brush. Do not try to spread it, as you do enamel, or unsightly streaks and raised areas will result.

Open-pored woods like oak or walnut require treatment with a paste filler if you want a smooth finish. The function of a filler is twofold: first, it fills the open pores, making an even, uniform surface and preventing your finishing agent from excessive absorption. Secondly, it emphasizes the natural grain pattern of your wood. Fillers should be permitted to dry thoroughly before the final clear finish (varnish, lacquer, etc.) is applied. •



Stain is not a finish coat, and must be covered. In this instance, Fabulon, a clear plastic finish, was brushed on. Birch grain stands out strongly.

The completed table; finish on top is very durable, resistant against alcohol and food stains.





Photo by William F. Howland

Bookcase mounted on two Storage Cabinets and Chest of Drawers (Projects 3, 8, and 5 respectively) results in a handsome dining room breakfront.

modular arrangements

All of the foregoing projects were designed to blend into harmonious relationships with each other. Here are a few outstanding arrangements.

BECAUSE the cabinets, chests, and bookcases in this volume have been designed in linear multiples ranging from two to eight feet, you can make a great number of modular arrangements with them. Cabinets or chairs may be placed side by side, or you can stack a bookcase on top of two or three cabinets (depending on the length of the former) to make a handsome breakfront. Three two-foot-wide cabinets may be combined with a Desk Top (Project 13) to create the illusion of a single solid piece. The Coffee Table-Bench-Base (Project 12) can also be used in many clever ways to take advantage of its triple-purpose design. The variety and distinctiveness of these arrangements are limited only by your own imagination and available space. Shown on the following pages are several examples of outstanding combinations that will give you ideas for your own home. •



Studio Couch (Project 18) is flanked by a pair of End Tables (Project 19) to form a colorful and utilitarian living room corner. Notice how the wide webbing used to upholster the couch contributes to the total effect by contrasting tastefully with the painted frame. Tables were given natural finish.

Pair of Storage Cabinets placed side by side presents an ample and easily accessible area for odds and ends. Hinges were placed on opposite sides to increase versatility of respective units. (Turn page.)

Photo by William F. Howland



modular arrangements

Rectangular Coffee Table (Project 1) makes an ideal unit for the foyer or den. The comfortable Lounge Chair (Project 17) may be seen through the doorway to the living room. In the foreground, the Webbed Stool (Project 4) is used as a conveniently placed occasional chair.

Courtesy N. Y. C. Housing Authority



Right: Rectangular Coffee Table can be made to the proper height so that it can be used with the Child's Chair (Project 21). Combined pieces make excellent play center. Courtesy N. Y. C. Housing Authority



Below: Webbed Armchair and Nested Tables (Projects 15 and 10) add charm and grace to any setting. Note variety of finishing techniques used throughout. (Turn page.) Photo by Bill Jackson



modular arrangements

Below: Two of the 72-inch Sliding-Door Cabinets (Project 11) placed side by side create a truly unbeatable storage center, and indisputably add to the appearance of the room. Tops and sides were painted, walnut-faced doors finished natural.



Photos by Bill Jackson

Three Living Room Chairs placed in this position add up to a large, comfortable seating area. The Convertible Table (Project 7) is at right.





Photo by William F. Howland

Above: A similar arrangement to that shown on page 138, but without the bookcase. Here again, colorful webbing was used against a chair frame that was painted a dark color. Top of Rectangular Coffee Table was shortened to fit in space.



Trio of Living Room Chairs was covered with foam-rubber cushions to make units even more comfortable and to unify them visually, giving them the appearance of a solid piece. Contrast this view with photograph shown at the left. (Turn page.)

Photo by Bill Jackson

modular arrangements

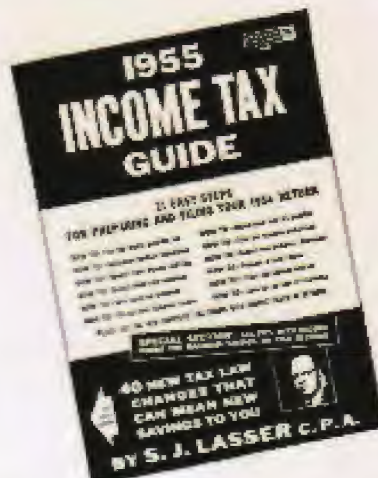


Photo by William F. Howland

Same modular pieces, Storage Cabinets and Chest of Drawers, have here been mounted on 72-inch Table-Base (Project 12) and have been further unified by the addition of a Flat Desk Top (Project 13). Many other arrangements are possible, using the same basic idea as a starting point. (Compare with photo on page 68.)

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